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SUMMARY OF ACTIVITIES

OF THE

COMMITTEE ON SCIENCE AND TECHNOLOGY

U.S. HOUSE OF REPRESENTATIVES

FOR THE

NINETY-SEVENTH CONGRESS

JANUARY 3, 1983

JANUARY 3, 1983.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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I

COMMITTEE ON SCIENCE AND TECHNOLOGY

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RICHARD L. OTTINGER, New York
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RICHARD C. WHITE, Texas
HAROLD L. VOLKMER, Missouri
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WILLIAM CARNEY, New York
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*On assignment to Budget Committee for 97th Congress.

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LETTER OF TRANSMITTAL

COMMITTEE ON SCIENCE AND TECHNOLOGY,
U.S. HOUSE OF REPRESENTATIVES,
Washington, D.C., January 3, 1983.

Hon. THOMAS P. O'NEILL, JR.,
Speaker of the House,
The Capitol,
Washington, D.C.

DEAR MR. SPEAKER: In compliance with Clause 1(d), Rule XI of the Rules of the House of Representatives, there is transmitted herewith the Summary of Activities of the Committee on Science and Technology for the 97th Congress.

The purpose of this report is to provide the Members of the House of Representatives, and the general public, with an overview of the legislative and oversight activities conducted by this committee, pursuant to Clause 1(r) and Clause 3(f) of Rule X of the Rules of the House of Representatives.

This document is intended as a general reference tool, and not as a substitute for the hearings records, reports, and other committee files.

Sincerely,

DON FUQUA,
Chairman.

Enclosure.

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Union Calendar No. 629

97th Congress
2d Session
HOUSE OF REPRESENTATIVES
Report
No. 97-1010

REPORT OF ACTIVITIES—SCIENCE AND TECHNOLOGY

January 3, 1983.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. Fuqua, from the Committee on Science and Technology, submitted the following

REPORT

HISTORY OF THE COMMITTEE ON SCIENCE AND TECHNOLOGY

The Committee on Science and Technology is the successor of the Committee on Science and Astronautics which was formed as a standing committee in the House of Representatives in 1959. The predecessor committee was a direct outgrowth of the intense escalation of scientific and technological endeavors in the United States after World War II when science and technology began to play an increasingly important and demanding role in every facet of our lives.

It was recognized that certain functions and jurisdictions related to science and technology that heretofore had been dispersed among several House committees, should be combined under the province of one standing committee.

In addition to bringing these functions together under the new Committee on Science and Astronautics, the House of Representatives also charged this committee with new functions incident to the development of outer space.

The formal jurisdiction of the Committee on Science and Astronautics included outer space, including exploration and control thereof, astronautical research and development inclusive of resources, personnel, equipment and facilities, scientific research and development, science scholarships and legislation relating to scientific agencies, particularly the Bureau of Standards (standardization of weights and measures and the metric system), the National

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Aeronautics and Space Administration, the National Aeronautics and Space Council and the National Science Foundation.

The Committee on Science and Astronautics retained this jurisdiction from 1959 to 1974 until the end of the 93rd Congress. Whereas the Committee's original emphasis in 1959 was almost exclusively astronautics, over its 15 year history its jurisdiction had expanded to encompass scientific research and development in general and both the emphasis and workload of the Committee had diversified to include this more comprehensive area.

In March of 1974, the Select Committee on Committees, appointed by the House of Representatives to conduct an extensive study of the organization of the House and the alignment of its respective Committee jurisdictions, presented its recommendations to the Congress. Included in these was the provision to establish a Committee on Science and Technology to replace the existing Committee on Science and Astronautics.

The new Committee on Science and Technology became operational at the commencement of the first session of the 94th Congress. It retained the previous jurisdictions of the Committee on Science and Astronautics and took on the responsibility of functions that were implied but not explicitly spelled out within the mandate of its predecessor. These include policy functions for science and the development of technology and also scientific and technological considerations bearing on policy decisions that are not primarily scientific. The general realm of scientific research and development was enlarged to include all non-nuclear energy, environmental, atmospheric and civil aviation research and development.

In addition, the Committee on Science and Technology was delegated jurisdiction over the National Weather Service. It was considered that the interdependence of weather with oceans and atmosphere made this a logical responsibility for the Committee.

Over and above the oversight functions that come within its legislative jurisdiction, the Committee on Science and Technology was assigned special oversight functions to review and study on a continuing basis, all laws, programs and government activities involving non-military research and development.

At the beginning of the 95th Congress, upon the abolition of the Joint Committee on Atomic Energy, the jurisdiction of the Science and Technology Committee was expanded to include nuclear research and development, thereby giving it jurisdiction over all energy research and development.

In the 96th Congress the Committee's jurisdiction over energy research and development was amended to specifically include energy demonstration projects and federally owned nonmilitary energy laboratories.

COMMITTEE ON SCIENCE AND TECHNOLOGY

DON FUQUA, Florida, *Chairman*

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GEORGE E. BROWN, Jr., California
JAMES H. SCHEUER, New York
RICHARD L. OTTINGER, New York
TOM HARKIN, Iowa
MARILYN LLOYD BOUQUARD, Tennessee
JAMES J. BLANCHARD, Michigan
TIMOTHY E. WIRTH, Colorado*
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JUDD GREGG, New Hampshire
RAYMOND J. McGRATH, New York
JOE SKEEN, New Mexico
CLAUDINE SCHNEIDER, Rhode Island
JIM DUNN, Michigan
BILL LOWERY, California

Staff

Robert C. Ketcham, *General Counsel*
Regina A. Davis, *Administrator*
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Anthony C. Taylor, *Staff Director*, Subcommittee on Transportation, Aviation and Materials
Robert B. Nicholas, *Staff Director*, Subcommittee on Investigations and Oversight
David S. Jeffery, *Minority Staff Director*
Paula M. Teeples, *Calendar/Legislative Clerk*

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*Serving on Committee on the Budget for 97th Congress.

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HISTORY OF APPOINTMENTS

COMMITTEE ON SCIENCE AND TECHNOLOGY

NINETY-SEVENTH CONGRESS

The following Members were elected by H.Res. 44, adopted January 28, 1981: Don Fuqua (chairman), Florida; Robert A. Roe, New Jersey; George E. Brown, Jr., California; James H. Scheuer, New York; Richard L. Ottinger, New York; Tom Harkin, Iowa; Marilyn Lloyd Bouquard, Tennessee; James J. Blanchard, Michigan; Doug Walgren, Pennsylvania; Ronnie G. Flippo, Alabama; Dan Glickman, Kansas; Albert Gore, Jr., Tennessee; Robert A. Young, Missouri; Richard C. White, Texas; Harold L. Volkmer, Missouri; Howard Wolpe, Michigan; Bill Nelson, Florida; Stanley N. Lundine, New York; Allen E. Ertel, Pennsylvania; Bob Shamansky, Ohio; Ralph M. Hall, Texas; Dave McCurdy, Oklahoma; Mervyn M. Dymally, California.

The following Members were elected by H.Res. 45, adopted January 28, 1981: Larry Winn, Jr., Kansas; Barry M. Goldwater, Jr., California; Hamilton Fish, Jr., New York; Manuel Lujan, New Mexico; Harold C. Hollenbeck, New Jersey; Robert S. Walker, Pennsylvania; Edwin B. Forsythe, New Jersey; William Carney, New York; Margaret M. Heckler, Massachusetts; F. James Sensenbrenner, Jr., Wisconsin; Vin Weber, Minnesota; Judd Gregg, New Hampshire; Raymond J. McGrath, New York; Joe Skeen, New Mexico, Claudine Schneider, Rhode Island; Jim Dunn, Michigan; Bill Lowery, California.

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SUBCOMMITTEES

Energy Development and Applications

DON FUQUA, Florida, *Chairman*

TOM HARKIN, Iowa
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RICHARD C. WHITE, Texas
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RAYMOND J. McGRATH, New York
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ROBERT S. WALKER, Pennsylvania

Natural Resources, Agriculture Research and Environment

JAMES H. SCHEUER, New York, *Chairman*

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ROBERT A. YOUNG, Missouri
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HAROLD L. VOLKMER, Missouri
HOWARD WOLPE, Michigan

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BILL LOWERY, California
BARRY M. GOLDWATER, Jr., California
HAROLD C. HOLLENBECK, New Jersey

Science, Research and Technology

DOUG WALGREN, Pennsylvania, *Chairman*

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BOB SHAMANSKY, Ohio
MERVYN M. DYMALLY, California
STANLEY N. LUNDINE, New York
ALLEN E. ERTEL, Pennsylvania
RALPH M. HALL, Texas
DAVE McCURDY, Oklahoma

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Space Science and Applications

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RALPH M. HALL, Texas

HAROLD C. HOLLENBECK, New Jersey
RAYMOND J. McGRATH, New York
BILL LOWERY, California

Transportation, Aviation and Materials

DAN GLICKMAN, Kansas, *Chairman*

RALPH M. HALL, Texas
TOM HARKIN, Iowa
BOB SHAMANSKY, Ohio
MERVYN M. DYMALLY, California
RONNIE G. FLIPPO, Alabama

BARRY M. GOLDWATER, Jr., California
JIM DUNN, Michigan
HAROLD C. HOLLENBECK, New Jersey
WILLIAM CARNEY, New York

Investigations and Oversight

ALBERT GORE, Jr., Tennessee, *Chairman*

BOB SHAMANSKY, Ohio
HAROLD L. VOLKMER, Missouri

ROBERT S. WALKER, Pennsylvania
MANUEL LUJAN, Jr., New Mexico

The Chairman and the Ranking Minority Member shall serve as ex officio members of all subcommittees and shall have the right to vote on all matters before the subcommittees, subject to the provisions of Rule 28 of the Committee Rules Governing Procedure.

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RULES GOVERNING PROCEDURE

OF THE

COMMITTEE ON
SCIENCE AND TECHNOLOGY

U.S. HOUSE OF REPRESENTATIVES

97TH CONGRESS

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GENERAL

1. The Rules of the House of Representatives, as applicable, shall govern the committee and its subcommittees. The rules of the committee, as applicable, shall be the rules of its subcommittees.

COMMITTEE MEETINGS

Time and Place

2. Unless dispensed with by the chairman, the meetings of the committee shall be held on the 1st and 3rd Tuesday of each month the House is in session at 10:00 a.m. and at such other times and in such places as the chairman may designate.

3. The chairman of the committee may convene as necessary additional meetings of the committee for the consideration of any bill or resolution pending before the committee or for the conduct of other committee business.

*4. The committee shall make public announcement of the date, place and subject matter of any of its hearings at least one week before the commencement of the hearing. If the chairman determines that there is good cause to begin the hearing sooner, he shall make the announcement at the earliest possible date. Any announcement made under this subparagraph shall be promptly published in the Daily Digest.

*5. The committee may sit while the House is reading a measure for amendment under the 5-minute rule, provided 10 or more Members on the House floor do not object when special leave for such committee or subcommittee to sit is requested.

Presiding Officer

*6. If the chairman of the committee is not present at any meeting of the committee, the ranking Member of the Majority Party on the committee who is present shall preside.

Order of Business

*7. The order of business and procedure of the committee and the subjects of inquiries or investigations will be decided by the chairman, subject always to an appeal to the committee.

Membership

8. A majority of the Majority Members of the committee shall determine an appropriate ratio of Majority to Minority Members for

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*Indicates rules applicable to subcommittees.

each subcommittee and shall authorize the chairman to negotiate that ratio with the Minority Party; *Provided, however*, that party representation on each subcommittee (including any ex-officio Members) shall be no less favorable to the Majority than the ratio for the full committee. *Provided, further* that recommendations of conferees to the Speaker shall provide a ratio of Majority Party Members to Minority Party Members which shall be no less favorable to the Majority Party than the ratio for the full committee.

Special Meetings

9. If three or more Members of the committee desire a special meeting of the committee such Members may file in the offices of the committee their written request to the chairman for such meeting. The request shall specify the measure or matter to be considered. Immediately upon the filing of the request, the clerk of the committee shall notify the chairman of such filing. If, within three calendar days after the filing of the request, the chairman does not call a special meeting, to be held within seven calendar days after the filing of the request, a majority of the Members of the committee may file in the offices of the committee a written notice that a special meeting of the committee will be held, specifying a time and place, and the measure or matter to be considered. The committee shall meet at that time. Immediately upon the filing of the notice, the clerk of the committee shall notify all Members of the committee when the meeting will be held and the measure or matter to be considered. Only the measure or matter specified in the notice may be considered at that meeting.

COMMITTEE PROCEDURES

Quorum

*10. One-third of the Members of the committee shall constitute a quorum for all purposes except that a majority must be present in order to: (1) report or table any legislation, measure or matter; (2) close committee meetings or hearings; or (3) authorize the issuance of subpenas.

*11. The number of Members to constitute a quorum for taking testimony and receiving evidence shall not be less than two, one of whom shall be a Member of the Minority.

*12. The committee shall not make any determination by poll on any measure or matter involving its substantive, or non-procedural, legislative or oversight functions.

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*Indicates rules applicable to subcommittees.

Proxies

*13. A Member may authorize a general proxy only for motions to recess, adjourn or other procedural matters. However, a Member may vote by special proxy. The special proxy authorization shall be in writing, shall assert that the Member is absent on official business or is otherwise unable to be present at the meeting of the committee, shall designate the person who is to execute the proxy authorization and the dates for which it is to be used and shall be limited to a specific measure or matter and any amendments or motions pertaining thereto. Each proxy to be effective shall be signed by the Member assigning his or her vote and shall contain the date and time of day that the proxy is signed. Proxies may not be counted for quorum purposes.

Witnesses

*14. The committee shall, insofar as is practicable, require each witness who is to appear before it to file with the committee (in advance of his or her appearance) a written statement of the proposed testimony and to limit the oral presentation at such appearance to a summary of his or her statement.

*15. Whenever any hearing is conducted by the committee on any measure or matter, the Minority Members of the committee shall be entitled, upon request to the chairman by a majority of them, before the completion of the hearing, to call witnesses selected by the Minority to testify with respect to the measure or matter at least one day during the hearing.

16. Clause 2(k) of Rule XI of the Rules of the House of Representatives is hereby incorporated by reference (rights of witnesses under subpena).

Subject Matter

*17. Bills and other substantive matters may be taken up for hearing only when called by the chairman of the committee or by a majority vote of a quorum of the committee, except those matters which are the subject of special-call meetings outlined in Rule 9.

18. No private bill will be reported by the committee if there are two or more dissenting votes. Private bills so rejected by the committee will not be reconsidered during the same Congress unless new evidence sufficient to justify a new hearing has been presented to the committee.

*19.(a) It shall not be in order for the committee to consider any new or original measure or matter unless written notice of the date, place and subject matter of consideration and to the extent practicable, a written copy of the measure or matter to be considered, has been available in the office of each Member of the committee for at least three calendar days in advance of consideration, excluding Saturdays, Sundays and legal holidays.

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*Indicates rules applicable to subcommittees.

(b) Notwithstanding the foregoing sections of this rule, consideration of any legislative measure or matter by the committee shall be in order by vote of two-thirds of the Members present, provided that a majority of the committee is present.

Open Meetings

*20. Each meeting for the transaction of business, including the markup of legislation, of the committee shall be open to the public except when the committee, in open session and with a quorum present, determines by roll call vote that all or part of the remainder of the meeting on that day shall be closed to the public. No person other than Members of the committee and such congressional staff and such departmental representatives as they may authorize shall be present at any business or markup session which has been closed to the public. This paragraph does not apply to open committee hearings which are provided for by Rule 21 contained herein, or to any meeting that relates solely to internal budget or personnel matters.

*21. Each hearing conducted by the committee shall be open to the public except when the committee, in open session and with a quorum present, determines by roll call vote that all or part of the remainder of that hearing on that day shall be closed to the public because disclosure of testimony, evidence or other matters to be considered would endanger the national security or would violate any law or rule of the House of Representatives; *Provided, however*, that the committee may by the same procedure vote to close one subsequent day of hearing.

Requests for Roll Call Votes

22. A roll call of the Members may be had at the request of three or more Members.

Committee Records

*23. The committee shall keep a complete record of all committee action which shall include a record of the votes on any question on which a roll call vote is demanded. The result of each roll call shall be made available by the committee for inspection by the public at reasonable times in the offices of the committee. Information so available for public inspection shall include a description of the amendment, motion, order or other proposition and the name of each Member voting for and each Member voting against such amendment, motion, order or proposition, and the names of those Members present but not voting.

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*Indicates rules applicable to subcommittees.

5-Minute Rule During Committee Proceedings

*24. The time any one Member may address the committee on any bill, motion or other matter under consideration by the committee or the time allowed for the questioning of a witness at hearings before the committee will be limited to five minutes, and then only when the Member has been recognized by the chairman, except that this time limit may be waived by the chairman or acting chairman. The rule of germaneness will be enforced by the chairman.

Requests for Written Motions

*25. Any legislative or non-procedural motion made at a regular or special meeting of the committee and which is entertained by the chairman shall be presented in writing upon the demand of any Member present and a copy made available to each Member present.

SUBCOMMITTEES

Structure and Jurisdiction

26. The committee shall have the following standing subcommittees with the jurisdiction indicated.

(*a*) ***Subcommittee on Energy Development and Applications.***—Legislation, general and special oversight and all other matters relating to research, development and demonstration programs in fossil energy R&D; solar applications; solar technology; advanced energy technology; energy conservation; biomass; basic energy sciences; high energy and nuclear physics; geothermal energy; international cooperation in non-nuclear energy; and policy and management programs of the Department of Energy.

(*b*) ***Subcommittee on Natural Resources, Agriculture Research and Environment.***—Legislation, general and special oversight and all other matters relating to natural resources, including, but not limited to, water research, and, to the extent appropriate, agriculture R&D; legislation, risk assessment and other matters relating to environmental research and development generally—including, but not limited to, research and development activities of the Environmental Protection Agency; environmental health, safety, life sciences, pharmaceutical and biomedical activities of Executive departments and agencies, as appropriate; operational and research and development activities related to the atmosphere (including meteorology, aeronomy, climate, weather modification); and those ocean R&D activities related to the quality and management of the environment of the National Oceanic and Atmospheric Administration.

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*Indicates rules applicable to subcommittees.

(*c*) ***Subcommittee on Energy Research and Production.***—Legislation, general and special oversight and all other matters relating to research, development and demonstration involving nuclear fission and the nuclear fuel cycle; nuclear fusion; electric energy systems; energy storage systems; hydroelectric energy systems; international cooperation in nuclear matters (except for exports of nuclear technology and hardware); and policy and management programs of the Department of Energy.

(*d*) ***Subcommittee on Science, Research and Technology.***—Legislation, general and special oversight and all other matters relating to the National Science Foundation; the National Bureau of Standards; the Office of Science and Technology Policy; the Office of Technology Assessment; scientific research and development and applications; science policy; scientific resources (including manpower); science education; science information and information sciences; technology transfer; technology assessment; innovation, productivity, and industrial R&D; standards (weights, measures, etc.); patent policies as they relate to Federal research and development programs; R&D involving governmental health, biomedical, nutritional and handicapped programs; biotechnology; intergovernmental mechanisms for R&D; and international cooperation in science and technology.

(*e*) ***Subcommittee on Space Science and Applications.***—Legislation, general and special oversight and all other matters relating to the National Aeronautics and Space Administration (except aeronautical research and development); national programs of research and development in space exploration, space applications, space communications and related matters; and all matters relating to a land observing system.

(*f*) ***Subcommittee on Transportation. Aviation and Materials.***—Legislation, general and special oversight and all other matters relating to civil avaition research and development (includes aeronautical research and technology programs of the National Aeronautics and Space Administration and research and development programs of the Federal Aviation Administration); transportation programs of the Department of Energy; aviation-weather services; materials R&D and national materials policies, both domestic and international; oversight of surface transportation research and development programs of the Department of Transportation, Urban Mass Transportation Administration, Federal Railroad Administration, Federal Highway Administration, National Highway Traffic Safety Administration, and Coast Guard and the Maritime Administration; oversight of research and development in communications other than that for which the Subcommittee on Space Science and Applications is responsible.

(*g*) ***Subcommittee on Investigations and Oversight.***—Review and study, on a continuing basis, of the application, administration, execution, and effectiveness of those laws, or parts of laws, the subject matter of which is within the jurisdiction of the Committee and the organization and operation of the Federal and private agencies and entities having responsibilities in or for the administration and execution thereof, in order to determine whether such laws and the programs thereunder are being implemented and carried out in accordance with the intent of the Congress. In addition, the Subcommittee on Investigations and Oversight and the appropriate subcommittee with legislative authority may cooperatively review and study any conditions or circumstances which indicate the necessity or desirability of enacting new or additional legislation within the jurisdiction of the Committee, and may undertake future research and forecasting on matters within the jurisdiction of the Committee. The Subcommittee on Investigations and Oversight shall in no way limit the responsibility of other subcommittees from carrying out their oversight responsibilities, nor shall any investigation be undertaken by the Subcommittee on Investigations and Oversight without (a) consultation with the chairman of the appropriate subcommittee with legislative authority and (b) approval of the chairman of the Committee.

Referral of Legislation

27. All legislation and other matters referred to the committee shall be referred to all subcommittees of appropriate jurisdiction within two weeks unless, by consent of a majority of the Majority Members of the full committee, consideration is to be by the full committee. Subcommittee chairmen may make requests for referral of specific matters to their subcommittee within the two-week period if they believe subcommittee jurisdictions so warrant.

Ex Officio Members

28. The chairman and ranking Minority Member shall serve as ex officio Members of all subcommittees and shall have the right to vote and be counted as part of the quorum on all matters before the subcommittees.

Procedures

29. No subcommittee shall meet for markup or approval when any other subcommittee of the committee is meeting to consider any measure or matter for markup or approval.

30. Each subcommittee is authorized to meet, hold hearings, receive evidence, and report to the committee on all matters referred to it. Each subcommittee shall conduct legislative and general oversight, inquiries for the future and forecasting, and budget impact studies

on matters within their respective jurisdictions. Subcommittee chairmen shall set meeting dates after consultation with the chairman and other subcommittee chairmen with a view toward avoiding simultaneous scheduling of committee and subcommittee meetings or hearings wherever possible.

31. Any Member of the committee may have the privilege of sitting with any subcommittee during its hearings or deliberations and may participate in such hearings or deliberations, but no such Member who is not a member of the subcommittee shall vote on any matter before such subcommittee.

32. During any subcommittee proceeding for markup or approval, a roll call vote may be had at the request of one or more Members of that subcommittee.

REPORTS

Substance of Legislative Reports

33. The report of the committee on a measure which has been approved by the 'committee shall include the following, to be provided by the committee:

(A) the oversight findings and recommendations required pursuant to clause 2(b)(1) of Rule X of the Rules of the House of Representatives, separately set out and identified, [Clause 2(l)(3)(A), Rule XI];

(B) the statement required by section 308(a) of the Congressional Budget Act of 1974, separately set out and identified, if the measure provides new budget authority or new or increased tax expenditures, [Clause 2(l)(3)(B), Rule XI];

(C) a detailed analytical statement as to whether the enactment of such bill or joint resolution into law may have an inflationary impact on the national economy, [Clause 2(l)(4), Rule XI];

(D) with respect to each roll call vote on a motion to report such bill or resolution, the total number of votes cast for and the total number of votes cast against the reporting of such bill or resolution, [Clause 2(l)(2)(B), Rule XI];

(E) the estimate and comparison prepared by the committee under Clause 7(a)(1) and (2) of Rule XIII of the Rules of the House of Representatives, unless the estimate and comparison prepared by the Director of the Congressional Budget Office prepared under subdivision (A) of Rule 34 has been timely submitted prior to the filing of the report and included in the report, [Clause 7, Rule XIII]; and

(F) in the case of a bill or joint resolution which repeals or amends any statute or part thereof, the text of the statute or part thereof which is proposed to be repealed, and a comparative print of that part of the bill or joint resolution making the amendment and of the statute or part thereof proposed to be amended, [Clause 3, Rule XIII].

34. (a) The report of the committee on a measure which has been approved by the committee shall further include the following, to be provided by sources other than the committee:

(A) the estimate and comparison prepared by the Director of the Congressional Budget Office required under section 403 of the Congressional Budget Act of 1974, separately set out and identified, whenever the Director (if timely submitted prior to the filing of the report) has submitted such estimate and comparison to the committee, [Clause 2(l)(3)(C), Rule XI];

(B) a summary of the oversight findings and recommendations made by the Committee on Government Operations under clause 2(b)(2) of Rule X of the Rules of the House of Representatives, separately set out and identified, [Clause 2(l)(3)(D), Rule XI].

(b) Notwithstanding the foregoing sections of this rule, if the committee has not received prior to the filing of the report the material required under subdivisions (A) and (B) of this rule, then it shall include a statement to that effect in the report on the measure.

Minority and Additional Views

35. If, at the time of approval of any measure or matter by the committee, any member of the committee gives notice of intention to file supplemental, minority, or additional views, that member shall be entitled to not less than 3 calendar days (excluding Saturdays, Sundays, and legal holidays) in which to file such views, in writing and signed by that member, with the clerk of the committee. All such views so filed by one or more members of the committee shall be included within, and shall be a part of, the report filed by the committee with respect to that measure or matter. The report of the committee upon that measure or matter shall be printed in a single volume which shall include all supplemental, minority, or additional views which have been submitted by the time of the filing of the report, and shall bear upon its cover a recital that any such supplemental, minority, or additional views (and any material submitted under subdivisions (A) and (B) of Rule 34) are included as part of the report. However, this rule does not preclude (1) the immediate filing or printing of a committee report unless timely request for the opportunity to file supplemental, minority, or additional views has been made as provided by this subparagraph or (2) the filing by the committee of any supplemental report upon any measure or matter which may be required for the correction of any technical error in a previous report made by that committee upon that measure or matter.

36. The Chairman of the committee or subcommittee, as appropriate, shall advise Members of the day and hour when the time for submitting views relative to any given report elapses. No supplemental, minority or additional views shall be accepted for inclusion in the report if submitted after the announced time has elapsed unless the Chairman of the committee or subcommittee, as appropriate, decides to extend the time for submission of views beyond 3 days, in which case he shall communicate such fact to Members, including the revised day and hour for submissions to be received, without delay.

Consideration of Subcommittee Reports

37. Reports and recommendations of a subcommittee shall not be considered by the full committee until after the intervention of three calendar days, excluding Saturdays, Sundays and legal holidays, from the time the report is submitted and printed hearings thereon shall be made available, if feasible, to the Members, except that this rule may be waived at the discretion of the chairman.

Timing and Filing of Committee Reports

38. It shall be the duty of the chairman to report or cause to be reported promptly to the House any measure approved by the committee and to take or cause to be taken the necessary steps to bring the matter to a vote.

39. The report of the committee on a measure which has been approved by the committee shall be filed within seven calendar days (exclusive of days on which the House is not in session) after the day on which there has been filed with the clerk of the committee a written request, signed by a majority of the Members of the committee, for the reporting of that measure. Upon the filing of any such request, the clerk of the committee shall transmit immediately to the chairman of the committee notice of the filing of that request.

40. Any committee or subcommittee report published by the committee or a subcommittee shall follow the same procedures for its approval, including the opportunity to submit views, as is followed in the case of a report accompanying a bill or resolution which has been approved by the committee.

MEDIA COVERAGE

*41. The committee may permit, by majority vote, hearings or meetings which are open to the public to be covered in whole or in part by television, radio and still photography—or by any such methods of coverage—in accordance with clause 3 of Rule XI of the Rules of the House of Representatives.

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*Indicates rules applicable to subcommittees.

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LEGISLATIVE AND OVERSIGHT JURISDICTION OF THE COMMITTEE ON SCIENCE AND TECHNOLOGY

"RULE X. ESTABLISHMENT AND JURISDICTION OF STANDING COMMITTEES

"The Committee and Their Jurisdiction

"1. There shall be in the House the following standing committees, each of which shall have the jurisdiction and related functions assigned to it by this clause and clauses 2, 3, and 4; and all bills, resolutions, and other matters relating to subjects within the jurisdiction of any standing committee as listed in this clause shall (in accordance with and subject to clause 5) be referred to such committees, as follows:

* * * * * * *

"(r) Committee on Science and Technology.

"(1) Astronautical research and development, including resources, personnel, equipment, and facilities.

"(2) Bureau of Standards, standardization of weights and measures and the metric system.

"(3) National Aeronautics and Space Administration.

"(4) National Aeronautics and Space Council.

"(5) National Science Foundation.

"(6) Outer space, including exploration and control thereof.

"(7) Science scholarships.

"(8) Scientific research and development.

"(9) Civil aviation research and development.

"(10) Environmental research and development.

"(11) All energy research development, and demonstration, and projects therefor, and all federally owned or operated nonmilitary energy laboratories.

"(12) National Weather Service.

"In addition to its legislative jurisdiction under the preceding provisions of this paragraph (and its general oversight function under clause 2(b)(1)), the committee shall have the special oversight functions provided for in clause 3(f) with respect to all non-military research and development.

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"SPECIAL OVERSIGHT FUNCTIONS

"3. (f) The Committee on Science and Technology shall have the function of reviewing and studying, on a continuing basis, all laws, programs, and Government activities dealing with or involving nonmilitary research and development."

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SUMMARY OF LEGISLATIVE AND OVERSIGHT ACTIVITY

During the 97th Congress, 128 bills were referred to the Committee on Science and Technology. The Committee reported 26 bills to the House, 13 were enacted.

Three additional bills enacted contain titles or sections either reported by or worked on by the Committee as matters or jurisdiction: H.R. 3982 (P.L. 97-35); H.R. 4961 (P.L. 97-248); and H.R. 3809. These three bills are of major importance to the Committee, and required substantial Committee involvement to achieve the legislative product which was enacted. In each case, the special circumstances occasioned by the legislation, permitted the Committee to properly perform its legislative function and facilitate action without the usual referral of the particular aspect of jurisdiction to the Committee.

This activities report summarizes the legislative and oversight activity of the Full Committee and its Subcommittees. For emphasis, Section 26 of the Committee Rules Governing Procedure follows:

SUBCOMMITTEES

Structure and Jurisdiction

26. The committee shall have the following standing subcommittees with the jurisdiction indicated.

(a) Subcommittee on Energy Development and Applications.—Legislation, general and special oversight and all other matters relating to research, development and demonstration programs in fossil energy R&D; solar applications; solar technology; advanced energy technology; energy conservation; biomass; basic energy sciences; high energy and nuclear physics; geothermal energy; international cooperation in non-nuclear energy; and policy and management programs of the Department of Energy.

(b) Subcommittee on Natural Resources, Agriculture Research and Environment.—Legislation, general and special oversight and all other matters relating to natural resources, including but not limited to, water research, and, to the extent appropriate, agriculture R&D; legislation, risk assessment and other matters relating to environmental research and development generally—including, but not limited to, research and development activities of the Environmental Protection Agency; environmental health, safety, life sciences, pharmaceutical and biomedical activities of Executive departments and agencies, as appropriate; operational and research and development activities related to the atmosphere (including meteorology, aeronomy, climate, weather modification); and those ocean R&D activities related to the quality and management of the environment of the National Oceanic and Atmospheric Administration.

(c) Subcommittee on Energy Research and Production.—Legislation, general and special oversight and all other matters relating to research, development and demonstration involving nuclear fission and the nuclear fuel cycle; nuclear fusion; electric energy systems; energy storage systems; hydroelectric energy systems; international cooperation in nuclear matters (except for exports of nuclear technology and hardware); and policy and management programs of the Department of Energy.

(d) Subcommittee on Science, Research and Technology.—Legislation, general and special oversight and all other matters relating to the National Science Foundation; the National Bureau of Standards; the Office of Science and Technology Policy; the Office of Technology Assessment; scientific research and development and applications; science policy; scientific resources (including manpower); science education; science information and information sciences; technology transfer; technology assessment; innovation, productivity, and industrial R&D; standards (weights, measures, etc.); patent policies as they relate to Federal research and development programs; R&D involving governmental health, biomedical, nutritional and handicapped programs; biotechnology; intergovernmental mechanisms for R&D; and international cooperation in science and technology.

(e) Subcommittee on Space Science and Applications.—Legislation, general and special oversight and all other matters relating to the National Aeronautics and Space Administration (except aeronautical research and development); national programs of research and development in space exploration, space applications, space communications and related matters; and all matters relating to a land observing system.

(f) Subcommittee on Transportation, Aviation and Materials.—Legislation, general and special oversight and all other matters relating to civil aviation research and development (includes aeronautical research and technology programs of the National Aeronautics and Space Administration and research and development programs of the Federal Aviation Administration); transportation programs of the Department of Energy; aviation-weather services; materials R&D and national materials policies, both domestic and international; oversight of surface transportation research and development programs of the Department of Transportation, Urban Mass Transportation Administration, Federal Railroad Administration, Federal Highway Administration, National Highway Traffic Safety Administration, and Coast Guard and the Maritime Administration; oversight of research and development in communications other than for which the Subcommittee on Space Science and Applications is responsible.

(g) Subcommittee on Investigations and Oversight.—Review and study, on a continuing basis, of the application, administration, execution, and effectiveness of those laws, or parts of laws, the subject matter of which is within the jurisdiction of the Committee and the organization and operation of the Federal and private agencies and entitities having responsibilities in or for the administration and execution thereof, in order to determine whether such laws and the programs thereunder are being implemented and carried out in accordance with the intent of the Congress. In addition,

the Subcommittee on Investigations and Oversight and the appropriate subcommittee with legislative authority may cooperatively review and study any conditions or circumstances which indicate the necessity or desirability of enacting new or additional legislation within the jurisdiction of the Committee, and may undertake future research and forecasting on matters within the jurisdiction of the Committee. The Subcommittee on Investigations and Oversight shall in no way limit the responsibility of other subcommittees from carrying out their oversight responsibilities, nor shall any investigation be undertaken by the Subcommittee on Investigations and Oversight without (a) consultation with the chairman of the appropriate subcommittee with legislative authority and (b) approval of the chairman of the Committee.

The Committee authorizes its seven Subcommittees to conduct their own oversight activities consistent with House and Committee rules and procedures. Each Subcommittee has included a summary of their oversight studies and investigations during the 97th Congress.

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CHAPTER I—LEGISLATIVE ACTIVITIES OF THE COMMITTEE ON SCIENCE AND TECHNOLOGY

1.1—PUBLIC LAW 97-35, THE OMNIBUS RECONCILIATION ACT OF 1982. (H.R. 3982)

TITLE X: ENERGY AND ENERGY-RELATED PROGRAMS

Summary and background of legislation

Title X of the Omnibus Budget Reconciliation Act of 1981 established limitations by appropriation account for programs of the Department of Energy for FY 1982, 1983, and 1984. In some accounts, substantial changes were made in the policy assumptions behind the budget proposed by President Reagan for FY 1982. The limitations on FY 1983 and 1984 appropriations were established by a projection of the FY 1982 recommendations on the basis of the policy established for FY 1982.

The conference report established out-year authorization ceilings which limit individual appropriations accounts for FY 1983 and 1984. The conference report out-year ceilings specifications follow the current format for appropriations accounts, except for Departmental Administration, where funds for operating expenses, and for plant and capital equipment expenses were combined.

Where changes were made from the Administration's request for a particular appropriations account for FY 1982, the resulting change in activity was projected into future years to arrive at a new appropriations limitations ceiling. For instance, in the energy supply R & D plant and capital equipment account the amounts for new projects added to the budget in FY 1982 were included with the Administration's projected levels to arrive at the amounts specified for the FY 1983 and 1984. The operating expenses for fossil energy research and development decline in out-years consistent with the Administration's general policy even though the numbers for each of the three years exceed the Administration's proposed level of expenditure for FY 1982.

General Science and Research.—A total of $567,460,000 is authorized for FY 1982. Within the Life Sciences and Nuclear Medicine Program $600,000 is redirected from life sciences to nuclear medicine for construction of a prototype imaging device ($400,000) and for research in neutron capture therapy ($200,000).

Energy Supply Research and Development

Deferred Funds: Operating Expenses.—The total authorized budget authority for FY 1982 was $2,159,148,000. These funds include $2,057,460,000 in new budget authority and $101,688,000 in funds deferred from FY 1981.

Deferred funds: Plant and Capital Equipment.—The total authorized budget authority for FY 1982 was $406,779,000. These funds include $370,132,000 in new budget authority and $36,647,000 in funds deferred from FY 1981.

Solar Energy: Operating Expenses.—In the photovoltaic energy systems subprogram, the Federal Government was directed to take steps to maintain the cost reduction objectives of Public Law 95-590, the "Solar Photovoltaic Energy Research, Development and Demonstration Act of 1978." The funds for FY 1982 were available for purposes of Public Law 95-590 as well as the cost-shared 1 MWe Sacramento Municipal Utility District project. Funds were included within the total authorization to implement a decision on the Southeast Regional Residential Experiment Station.

In the solar thermal energy systems subprogram, $8.6 million was shifted from Research and Advanced Development to Technology Development for central receiver and parabolic dish systems. $6 million was provided for cost-shared repowering project designs and the Department was directed to expedite release of the Program Opportunity Notice. Of the funds authorized for appropriations in the solar thermal program, the Department was directed to provide up to $4 million for the 5 MWe Crosbyton solar hybrid electric power project, in Crosbyton, Texas. However, no funds were authorized to be obligated or expended for this project unless the fossil-fired portion of the project, including the fuel costs during the operational period, was privately funded.

$48.8 million was provided for the Wind Energy Systems subprogram to assist in achieving the goals of Public Law 96-345, the Wind Energy Systems Act without the need for the financial assistance and commercialization activities called for in the Act. The recommendation contains $18 million for the continuation of a parallel MOD-5 program with the requirement that cost-sharing of at least 50/50 will be required from each of the two contractors and/or utilities for the completion of design, fabrication and installation of three MOD-5 wind turbines by each contractor.

The OTEC subprogram was continued in FY 1982. The total authorization of $25 million includes $6.3 million in construction expenses and $700,000 in capital equipment for Phase I and commencement of Phase II design activity for a 40 MWe OTEC pilot plant. These funds are not available for activities beyond Phase II. Of the $6.7 million recommended for Solar Information, up to $3.5 million was made available for the continued operation of the National Solar Heating and Cooling Information Center (NSHCIC). With these funds, NSHCIC was to expand its informational support activities for all available incentives for renewables, not limited to just Solar Heating and Cooling.

Geothermal

Operating Expenses.—Operating funds are included for the Raft River project and for the second 50 MWe geothermal demonstration project at Heber, California.

Plant and Capital Equipment.—$7 million in new budget authority was provided for project 80-G-2, the second 50 MWe geothermal demonstration project. The total budget authority made available to the project in FY 1982 was $11 million, which includes $4 million of funds deferred in FY 1981.

Geothermal Resources Development Fund.—The Geothermal Loan Guarantee program, which was authorized by Public Law 93-410 as amended by Public Law 95-238, was directed to remain in effect regardless of the availability of funds for a reserve account in anticipation of default. It was stated that any actions reducing the availability of default funds would not revoke the Secretary's basic authority to commit to guarantees. It was stated further that the Department should continue to implement the loan guarantee program.

Fossil Energy Research and Development.—The Total of $478,960,000 was authorized for FY 1982.

The coal mining and preparation programs were reduced $4 million from the President's request.

Within the funds provided for the coal liquefaction programs an additional $10 million was available for the H-coal pilot plant at Cattletsburg, Kentucky. Also, within the amount for coal liquefaction, funds were to be made available for the orderly close out of the SRC pilot plant at Fort Lewis, Washington. If the flash hydropyrolysis liquefaction project were to be terminated, the funds were directed to be used for the development of the flash hydropyrolysis gasification project within the surface gasification program.

Within the total provided for the surface coal gasification program, $8 million was available for the Bi-Gas pilot plant and a total of $7 million was available for the low btu fluidized bed gasifier at Waltz Mill, Pennsylvania. Further, funds were directed to be used for continuation of the molten salt gasification process and the peat gasification program.

Within the funds available for the combustion systems program, $9 million was provided for continuation of the International Energy Agency Project for Pressurized Fluidized Bed Combustion at Grimethorpe, England. Further, additional funds are made available to pursue conversion of the waste residues at the atmospheric fluidized bed project in Shamokin, Pennsylvania.

An increase in funds for the fuel cell program was authorized to enable the Department of Energy to reorder its priorities within the program to enhance the electric utility applications of technology. A total increase of $11.4 million was to be available for the phosphoric acid activities. These funds were intended to be utilized to complete the 4.8 MWe power plant experiment at the Consolidated Edison site in New York City and to expedite the design and component testing efforts in the phosphoric acid fuel cell electric utility program. The funds were to support the development of several competing versions of phosphoric acid fuel cells and were intended to emphasize using alternative domestic fuels such as coal-based methanol. The molten carbonate fuel cell activity was reduced by $4.1 million.

The Department of Energy was directed to maintain a vital MHD development program consisting of the essential program elements. Engineering development (with industrial participation) of the coal combustor, the MHD generator and the downstream plant were directed to continue at the major MHD test facilities.

Funds were authorized within the oil shale activity to continue the cost-shared in situ demonstration program for in situ conversion, including funds for the Department's supporting research for evaluating both fracturing and retorting processes.

In the enhanced gas recovery program additional funds were provided to complete the Eastern Mineback Facility, permit the start-up of a stimulation test in the Eastern Devonian Shales, and also permit mineback rock fracturing tests in the western tight gas sands. These funds also were to provide for development of advanced diagnostic instrumentation and field testing of instruments.

The SRC–I project was continued with deferred funds from FY 1981, and the $135 million made available by the Supplemental Appropriations Act were to be used toward completion of the detailed engineering design of the project.

No construction funds for the SRC–I demonstration project were included in the authorization ceilings limiting appropriations for FY 1983 and FY 1984. The action did not reflect a decision on future funding for the project; funding in FY 1983 and FY 1984 would require specific action by the Congress. If additional funding were to be provided for the SRC–I project in these years, then the ceilings would be adjusted upward to reflect that action.

Conservation Research and Development.—The total authorization for the conservation R & D programs was $180,615,000.

Funds were provided to continue the community systems activity with special emphasis on district heating.

The industrial energy conservation program was continued. The funds provided continued the projects in the waste energy reduction activity, industrial process efficiency activity, and the industrial cogeneration activity.

Within the amounts provided for conservation, funds were available to continue the analysis and technology transfer activity and the industrial implementation and deployment activity.

Not less than 20 percent State cost-sharing in the Energy Extension Service program was required. This requirement was adopted in order to secure adequate State participation in the program. It was directed that cost-sharing may be satisfied through either a service, capital or cash contribution.

Energy Supply Research and Development Deferred Funds

Operating Expenses.—The total authorized budget authority for fiscal year 1982 was $2,159,148,000. These funds include $2,057,460,000 in new budget authority and $101,688,000 in funds deferred from fiscal year 1981.

Plant and Capital Equipment.—The total authorized budget authority for fiscal year 1982 was $406,779,000. These funds include $370,132,000 in new budget authority and $36,647,000 in funds deferred from fiscal year 1981.

Nuclear Fission R&D ($1,087.994 million)—Operating Expenses

Conventional Reactor Systems.—The act provided $38M for high temperature reactor technology for establishment of an HTGR lead plant project including the development of materials and components, and for continued international cooperation.

Breeder Reactor Systems.—The Clinch River Breeder Reactor Project was funded at $228 million. It was directed that the plant should be constructed in a timely and expeditious manner, so that a decision on the commercialization and deployment of breeder reactors can be made on the basis of information obtained in the operation of the plant. The plant should therefore be constructed on the basis of that objective and not on the basis of providing needed power in the specific region of the Clinch River site.

Water-Cooled Breeder.—Funding for the Water-Cooled Breeder Reactor program was reduced by $13M and further the DOE was directed to remove the LWBR core in fiscal year 1983 to assure an orderly termination of the Shippingport subprogram by the end of that fiscal year so that the private sector can make a decision on commercialization of this approach.

Fuel Cycle R&D.—In view of the need for LWR reprocessing technology, $8M was added to the request. The Breeder Fuel Cycle program was funded at the request level; $4M was provided for the Thorium Fuel Recycle program. The Department was directed to provide an analysis of reprocessing R&D and technology demonstration needs for all reactor types with appropriate priorities for each and a program plan. The Barnwell facility offers a unique opportunity to conduct R&D in irradiated fuel reprocessing and $10M was provided for continued R&D of which no more than $6M was to be utilized for R&D and testing at Barnwell.

Capital Equipment.—A total of $53.3M was authorized which includes $2M for the HTGR subprogram.

Construction.—Additional authorization of $17.8M above the Administration's fiscal year 1982 request was provided for Project 78-6-F, Fuels and Materials Examination Facility (FMEF), at Hanford, Washington.

Small-Scale Hydropower ($2 million)

Funding of $2M was provided to sustain a continuing federal involvement in R&D.

Electric Energy and Energy Storage Systems ($67 million)

Electric Energy Systems.—A total of $24.6M in operating expenses was provided for Electric Energy Systems with increases in systems architecture, power delivery (including $1.5M for domestic development of a submarine cable for use at great depth in Hawaiian waters), and storage applications (including $2M for the BEST Facility).

Energy Storage Systems.—An additional $3M was provided to the request of $37.9M to maintain an aggressive program, for a total authorization of $40.9M in operating funds.

Magnetic Fusion Energy ($473.5 million)

Within the authorized $320.7 operating budget, $12.7 million was allocated for the Mike McCormack Fusion Materials Test facility (formerly FMIT), and $14.15 million was allocated for the Center for Fusion Engineering subprogram.

An industrially managed Center for Fusion Engineering (CFE) was established presuming that at least two fiscal years would elapse prior to a commitment to the next major construction project (e.g., Fusion Engineering Device (FED)) in order to allow a smooth transition of technical information and manpower from existing organizations.

Advanced Isotope Separation ($86.442 million)

Although it is intended that a process selection should not be made until fiscal year 1983, there should be an optimum use of funds in the program and the Department is urged to chart a development strategy aimed at expeditious determination of the engineering feasibility of this technology for uranium enrichment.

Hydropower ($1 million)

$1 million was provided for technological demonstration using small-scale hydropower particularly ultra low-head hydropower for the generation of electricity.

Commercial Nuclear Waste ($67.345 million)

The Act provided the following amounts for Commercial Nuclear Waste Management other than research and development activities: $2M for repository licensing; $1M for assistance to states; $1M for low-level waste management; $9.8M for the West Valley Demonstration program ($3M below the request); $1.5M for state planning organization; and $51.070M for remedial actions ($4M below the request).

Research and development and other waste management activities were supported at a level consistent with the objective of submitting an application for a license for a full-scale facility for the permanent disposal of high-level nuclear waste in the 1987–1989 time period. Thus, in assimilating the reduction in the Terminal Waste Isolation program, the Department was expected to maintain a priority emphasis on site survey and characterization activities.

A reduction of $4 million in the Remedial Action program reflected delays in entering into cooperative agreements with States under the Uranium Mill Tailings Radiation Control Act. The Department was encouraged to plan clean-up activities to minimize to the extent practical transportation costs for remedial actions.

Uranium Enrichment ($1,805 million)

Funding for the Uranium Enrichment program was consistent with the currently planned completion dates for all phases of the new gas centrifuge facility project, which will provide approximately 8.8 million SWU of additional enrichment capacity. The $68,000,000 reduction in fourth-quarter construction authorization for the new gas centrifuge facility at Portsmouth, Ohio (GCEP, Project 76–8–g) was not intended to delay these completion dates, but is deferred for fiscal year 1982 and incorporated in the uranium enrichment authorization for appropriation in fiscal year 1983, which was increased $68 million to assure that the project continued on schedule.

Uranium enrichment revenues were estimated to total at a minimum $1,805,000,000 in 1982; $2,470,000,000 in 1983, and $2,686,000,000 in 1984.

The amounts authorized to be appropriated for uranium enrichment activities are intended to be offset by program revenues in accordance with section 111(h) of Public Law 93-438, as amended. These amounts when reduced by receipt spending authorizations for uranium enrichment activities are intended to total no more than the net amounts requested except as noted for the GCEP facility at Portsmouth, Ohio.

Departmental Administration ($246.963 million)

The overall funding level for Fiscal Year 1982 for Departmental Administration was $246,963,000, with $206,000,000 applicable to operating expenses and $40,963,000 available for plant and capital equipment.

These sums reflect a reduction of $26,068,000 from the total amount requested by the Administration, including a general reduction of $10,371,000 and specific changes resulting in an additional net reduction of $15,697,000.

It was intended that where budget reductions are to be implemented, there should be a priority to reduce the use of outside contractors. Responsibilities for the administration of the Department are to be carried out to the maximum extent possible by employees of the Federal Government, and not by contractors, thus obviating the need for reductions-in-force.

General Science and Research Activities

Operating Expenses.—The total authorized budget authority for fiscal year 1982 was $50,170,000. Further, the Act stipulated that within the Nuclear Medicine Program $600,000 is redirected from life sciences to nuclear medicine for construction of a prototype imaging device ($400,000) and for research in neutron capture therapy ($200,000).

Plant and Capital Equipment.—The total authorized budget authority for fiscal year 1982 was $2,200,000.

Department Administration

The overall funding level for fiscal year 1982 for Departmental Administration was $2,370,000.

Energy Supply, Research and Development

Operating Expenses.—The authorized budget authority for fiscal year 1982 was $162,000,000.

The following changes were made within the President's fiscal year 1982 budget request in environmental research and development. The Environmental Assessment Program was decreased by $6,000,000,000 to eliminate unnecessary studies; the Human Health Program was increased by $400,000 to permit additional research on inhalation toxicology; the Health Effects Biology Program was increased by $1,100,000 for study of the health effects of synthetic fuel-related pollutants ($900,000) and for the large animal pulmonary biology ($200,000); the Environmental Studies Program was increased by ($3,500,000) to restore funding on research in land reclamation ($2,900,000) and for environmental studies on synfuel pollutants ($600,000); the Physical and Technical Studies Program was increased by $1,000,000 for research and monitoring synfuel-related pollutants. The action taken on the land reclamation research program was not meant to prejudice the proposed transfer of this program in any way, however, a timely resolution of the proposed action was expected so that on-going research will not be adversely affected.

Plant and Capital Equipment.—The overall funding level for fiscal year 1982 was $4,000,000.

Department Administration

The overall funding level for fiscal year 1982 was $10,700,000, which was the level requested by the Administration.

Transportation Programs

The Committee on Science and Technology has jurisdiction over the transportation programs of the Department of Energy. For fiscal year 1982, DOE requested $108,920,000 for Transportation Programs Operating Expenses. A revised request for $35,750,000 was submitted subsequently. This amount was a 67% reduction from the amount appropriated for fiscal year 1981. More importantly, it represented a fundamental change in Federal automotive R&T policy.

The enabling legislation defined a Federal role in the advancement of automotive technology. The Administration proposal sought to alter that definition without amending the legislation. The Committee found this unacceptable.

Therefore, the Committee increased the amount requested for Operating Expenses by $33,000,000 to permit the continued development of proof-of-concept alternative heat engines. The increase was intended to continue the Stirling Engine development program, the Gas Turbine Engine development program, and the supporting automotive and truck technology. For the gas turbine program it was intended that two contractors be kept on board through MOD I testing. The new total for operating expenses was $68,770,000.

Legislative history

H.R. 3982, the Omnibus Reconciliation Act of 1981, was introduced on June 19, 1981 by Chairman Jones of the Committee on the Budget, "To provide for reconciliation pursuant to section 301 of the first concurrent resolution on the budget for the fiscal year 1982." Section 301 of the Budget Resolution instructed Committees of the House (pursuant to section 310(b)(2) of the Congressional Budget Act of 1974) to recommend program changes in laws within their jurisdiction to achieve specific reductions in spending for Fiscal Years 1982, 1983 and 1984.

The Full Committee with the assistance of the Subcommittee on Energy Development and Applications, the Subcommittee on Natural Resources, Agriculture Research and Environment, the Subcommittee on Energy Research and Production, and the Subcommittee on Transportation, Aviation and Materials, together with the Senate Committee on Energy and Natural Resources and the House Committees on Energy and Commerce and Interior and Insular Affairs, conferred on the provisions of Title X, Subtitle A, of the Omnibus Reconciliation Act.

H.R. 3982 was reported from the Committee on the Budget on June 19, 1981; Report 97-158. The bill was considered in the House of Representatives on June 25, 1981, and passed on June 26, 1981; in the Senate the bill was passed, amended, on July 13, 1981, at which time the Senate asked for a conference. The House agreed to a conference on July 15, 1981 and the conference report was filed in the House on July 29, 1981; (H. Rept. 97-208). The House and Senate agreed to the conference report July 31, 1981; the Act was signed into law on August 13, 1981 (Public Law 97-35).

1.2—PUBLIC LAW 97-96, THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION ACT, 1982. (H.R. 1257; S. 1098)

To authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes.

Summary and background of legislation

The Committee on Science and Technology has responsibility for annually authorizing the National Aeronautics and Space Administration's program. This jurisdiction is split between two subcommittees: Space Science and Applications for space science programs; and, Transportation, Aviation and Materials for aeronautical research and technology.

Public Law 97-96 authorized $6,172,200,000 to be appropriated to the National Aeronautics and Space Administration for fiscal year 1981. The Authorization included $4,953,780 for research and development programs under the following twelve line items: Space Shuttle, Space Flight Operation, Expendable Launch Vehicles, Physics and Astronomy, Planetary Exploration, Life Sciences, Space Applications, Technology Utilization, Aeronautical Research and Technology, Space Research and Technology, Energy Technology, and Tracking and Data Acquisition. The Authorization included $104,120,000 for Construction of Facilities including land acquisition under 14 line items, and $1,114,300,000 for research and Program Management which includes in salary, pay, retirement, or other employee benefits authorized by law for the National Aeronautics and Space Administration.

The aeronautics portions of the bill authorize funds for a program of aeronautical research covering the full range of flight disciplines, for construction of certain aeronautical facilities and for the institution to support these activities, including the salaries of NASA's civil service staff.

NASA initially requested $323,600,000 for Aeronautical Research and Technology. A revised request for $264,800,000 was submitted subsequently. This amount represented a decrease of 4.2 percent in actual dollars from the 1981 appropriation, and followed another decrease of 10.4 percent from 1980 to 1981.

The 1982 savings were achieved largely at the expense of "new starts" and those programs that have a high degree of industry participation, the Systems Technology Programs. Conversely, the

Research and Technology Base, which is conducted mostly inhouse, remained essentially intact. In fact, it has actually grown considerably in recent years.

The Committee strongly supported the urgent need to slow the growth in Federal expenditures, and recognized that NASA must do its part. Nevertheless, the evidence was undeniable that today's research and technology expenditures are vital to the future economic success of American aeronautical products. As such, they must be regarded as an investment and must be continued without excessive cuts. Some level of new work must be permitted to insure an uninterrupted flow of research results.

Furthermore, the Committee was concerned that NASA was withdrawing, too, from its traditional participation with industry. Since a close relationship with industry has been the single, most important factor in the successful commercialization of NASA's research, it is essential that this relationship be maintained.

Therefore, the Committee directed the following augmentations: High-Temperature Engine Core Technology ($4.0 million) Alternate Fuels and Materials ($3.0 million), High Speed Structures, Aerodynamics and Integration ($8.0 million), acceleration of the Advanced Turboprop Systems Program ($12.0 million), and Large Composite Primary Aircraft Structures ($4.0 million).

To partially offset these increases and to achieve a more balanced program, the Committee further directed a general reduction of $20,000,000 to be applied to low priority Research and Technology Base activities; avionics, electronics, displays and aircraft operating procedures research; programs with near-term application; and Laminar Flow Control. The new total was $276,000,000.

Legislative history

H.R. 1257 began as an Administrative proposal (Executive Communication 289). It was introduced January 23, 1981, by the Committee Chairman, by request, and was jointly referred to the two subcommittees with jurisdiction: the Subcommittee on Space Science and Applications and the Subcommittee on Transportation, Aviation and Materials.

Hearings were held by the Full Committee in January 1981, and the Subcommittees on Space Science and Applications, and Transportation, Aviation and Materials in February, March and April.

H.R. 1257 was reported to the Full Committee on April 2, 1981, by the Subcommittee on Space Science and Applications and on March 25, 1981, by the Subcommittee on Transportation.

The Subcommittee on Transportation, Aviation and Materials had conducted a program review hearing the previous September to begin the authorizing process by reviewing recent accomplishments. On February 10, 11 and 26 and March 19, 1981, budget request justification hearings were held to complete this record, and on March 18, 1981, a joint hearing was held with the Subcommittee on Space Science and Applications. Subcommittee markup occurred on March 25, 1981, and the bill was reported with amendment, the new total being $267,000,000.

H.R. 1257 was reported, with amendments, from the full Committee April 7, 1981, and H. Rept. 97-32 was filed May 8, 1981. A rule was granted (one hour, open) June 18, 1981, and the House passed the bill, as amended, June 12, 1981. Subsequently passage was vacated and S. 1098 was passed in lieu thereof after being amended to contain the language of H.R. 1257, as passed. However, the Senate disagreed to the House amendment to S. 1098 and requested a conference with the House. The House insisted on its amendment to S. 1098, and agreed to the conference. The conferees agreed and Conference Report 97-351 was filed in the House November 21, 1981. The conference report was received and agreed to by the Senate on November 23, 1981, and the House on December 8, 1981. The President signed the bill December 21, 1981 (Public Law 97-96).

1.3—PUBLIC LAW 97-80, THE EARTHQUAKE HAZARDS REDUCTION ACT OF 1977 AND THE FEDERAL FIRE PREVENTION AND CONTROL ACT OF 1974 AUTHORIZATION. (H.R. 3356)

To amend the Earthquake Hazards Reduction Act of 1977 and the Federal Fire Prevention and Control Act of 1974 to authorize the appropriation of funds to the Director of the Federal Emergency Management Agency to carry out earthquake hazards reduction programs and the fire prevention and control program, and for other purposes.

Summary and background of legislation

As reported, H.R. 3356 authorized $91,554,000. Of this total, the bill authorized $65,500,000 for the Earthquake Hazards Reduction Act, $21,115,000 for the bulk of the fire programs under the Federal Fire Prevention and Control Act for FY 1982 and $23,312,800 for FY 1983 and $4,939,000 for for the Multihazard Research, Planning and Mitigation Program. The $4,939,000 included a one year authorization for the Emergency First Response Fire Program.

The Committee was concerned that the faults in Southern California were not adequately instrumented. Therefore, the Committee authorized $1.5 million above the Administration's request for the U.S. Geological Survey's Program to establish the first phase of an operational prediction network in Southern California. The Committee was concerned that fire information from the U.S. Fire Administration and Fire Academy was not being adequately disseminated. The Committee requested an additional $300,000 above the Administration's request to improve outreach and dissemination programs at the National Fire Academy and U.S. Fire Administration to fire departments across the country.

Legislative history

The Subcommittee on Science, Research and Technology held authorization hearings on the fiscal year 1982 budget for the Earthquake Hazards Reduction Program and the Federal Fire Prevention and Control Program on February 25, March 4 and 11, 1981.

On March 24, 1981 the Subcommittee reported its recommendations in a draft version of the bill, and on April 27, H.R. 3263 was introduced on the Floor of the House by Subcommittee Chairman Walgren and Mrs. Heckler. H.R. 3263 was considered and amended in Full Committee markup on April 28, 1981. On April 30, 1981, a clean bill to supersede H.R. 3263 was introduced in the House and jointly referred to the Committees on Science and Technology and Interior and Insular Affairs. On May 13, 1981, the Committee ordered H.R. 3356, favorably reported by roll call vote (H. Report 97-59), Part 2). On May 7, 1981 the Subcommittee on Mines and Mining of the Interior and Insular Affairs Committee recommended that the U.S. Geological Survey's budget be reduced from $35,925,000 to $34,425,000. The bill, as amended, was recommended by voice vote to the Full Committee. On May 13, 1981, the Interior Committee ordered H.R. 3356 reported, as amended, by voice vote (H. Report 97-59, Part 1).

The Committees on Science and Technology and Interior and Insular Affairs agreed to offer on the House Floor a substitute which reflected a compromise of $35,425,000 for the earthquake program at the U.S. Geological Survey. H.R. 3356 as amended, authorized $91.1 million for Fiscal Year 1982 which included $65.0 million to the Earthquake Program, $21.1 million to the fire program and $4.9 million to the Multihazard Program. On October 13, 1981, H.R. 3356 passed the House under Suspension of the Rules. Subsequently passage was vacated and S. 999 passed, after striking all after the enacting clause and substituting the provisions of the House-passed H.R. 3356.

On October 16, 1981, the Senate agreed to the House amendments, with amendments. The dollar amounts were not changed from the House version. However, the Senate revised Title II to include a two year authorization for the fire program and language which transfers title of the Marjorie Webster College from the National Fire Academy to Gallaudet College. In Title IV, the Senate deleted technical proportionality language related to appropriation levels. On November 5, 1981, the House agreed to the Senate amendments, with amendments. The bill was reduced by $1.3 million to be in alignment with the Administration's budget request as follows: the U.S. Geological Survey's program was reduced by $1 million to $34,425,000 and the fire program was reduced by $300,000 to $20,815,000. Consequently, the total funding passed in H.R. 3356 was $89,754,000. On that same day, the Senate concurred in the House amendments, clearing the measure for the President. Public Law 97-80 was signed by the President on November 20, 1981.

1.4—H. RES. 202, WITH RESPECT TO THE MODERNIZATION AND REPLACEMENT OF THE FEDERAL AVIATION ADMINISTRATION AIR TRAFFIC CONTROL ENROUTE COMPUTER SYSTEM.

Summary and background of legislation

H. Res. 202 expressed the sense of the House of Representatives that the Administrator of the Federal Aviation Administration should submit to the Committee on Science and Technology full R&D program planning documentation with respect to the modernization and replacement of the FAA air traffic control enroute computer system.

Legislative history

H. Res. 202 was introduced by the Chairman of the Subcommittee on Transportation, Aviation and Materials and 10 cosponsors on July 30, 1981. On August 24, 1981, the measure was referred to the Subcommittee on Transportation, Aviation and Materials. Prior to introduction, the Subcommittee on Transportation, Aviation and Materials held oversight hearings in June to review the various issues surrounding the Federal Aviation Administration's enroute computer modernization plans. The Subcommittee markup was held September 30, 1981, and the resolution was ordered forwarded to the Full Committee, with amendments; the Full Committee ordered the resolution reported with an amendment on October 6, 1982. H. Rept. 97-271 was filed in the House on October 14, 1981. On October 19, 1981, the resolution passed the House under Suspension of Rules, amended, by voice vote (agreed to amend the title).

1.5—Public Law 97-219, the Small Business Innovation Development Act of 1982. (H.R. 4326; S. 881)

To amend the Small Business Act to strengthen the role of the small, innovative firms in federally funded research and development, and to utilize federal research and development as a base for technological innovation to meet agency needs and to contribute to the growth and strength of the nation's economy.

Summary and background of legislation

Public Law 97-219 seeks to strengthen the role of small business in federally funded research and development and to utilize federal research and development as a base for technological innovation.

As enacted, each federal agency with an extramural R&D budget in excess of $100 million is required to establish a small business innovation research (SBIR) program, and to set aside annually 1.25 percent (phased in over a 4 year period; 5 years for DOD) of the agency R&D budget to fund the SBIR program. Nine agencies will be involved in the federal-wide program: Department of Defense, NASA, Department of Health and Human Services, Department of Energy, Department of Transportation, National Science Foundation, Department of Agriculture, Environmental Protection Agency and the Nuclear Regulatory Commission.

The Small Business Innovation Research program was modelled after SBIR program currently in operation at the National Science Foundation. Agency R&D funds set aside under the new act will be exclusively utilized to fund small business research proposals which meet government R&D objectives. The program was designed to facilitate and encourage the conversion of the research to innovations and ultimately commercial applications which will be funded by third party, non-federal sources (e.g., venture capitalists or individual firms).

Other provisions of the Act require agencies with R&D budgets over $20 million to establish goals for the funding of small businesses (which shall be not less than the small business share of the agency R&D budget in the preceding year).

The Small Business Administration is given primary responsibility for implementing the Act, and will oversee federal-wide operation of the program in conjunction with the Office of Science and Technology Policy and the General Accounting Office.

A sunset provision repeals the Act after 6 years (October 1, 1988).

H.R. 4326 was sequentially referred to the Committee on Science and Technology following its consideration by the Small Business Committee. The Committee on Science and Technology has jurisdiction over six of the agencies affected by the legislation, including the National Science Foundation whose program served as the model for the bill. The House Rules also assign to the Science and Technology Committee oversight responsibilities of all civilian research and development. The Committee's review of the legislation, which included 3 days of hearings, resulted in an amendment which contained as its principal feature the requirement that agency funds set aside for SBIR programs be available to the extent required in acts authorizing appropriations for each agency. The Committee further reduced the set aside figure from 3 percent to 1 percent.

While the Committee's amendment was defeated on the House floor, it did figure prominently in the reconsideration of H.R. 4326 by the Small Business Committee. Several of the key features contained in the Science and Technology Committee's amendment were later incorporated in a second version of H.R. 4326 reported by the Small Business Committee and subsequently enacted into law. These include a significant reduction in the percentage set aside, from 3 percent to 1.25 percent, a "capping" of the amount of an agency's basic research funds which could be utilized for the SBIR program, and a requirement for independent review and reporting by the Comptroller General.

Legislative history

On November 20, 1981, the Committee on Science and Technology was granted sequential referral of the bill, H.R. 4326, the Small Business Innovation Development Act. The bill was also sequentially referred to the Committees on Armed Services and Energy and Commerce, and on December 8, 1981, the Veterans Affairs Committee was granted sequential referral. On March 2, the Committee on Foreign Affairs and the Select Committee on Intelligence received sequential referral of the bill.

Full Committee hearings were held January 26, 27, and 28, 1982 and on March 9, the Committee ordered the bill reported with an amendment, H. Rept. 97-349, Pt. 4. Rules Committee hearings were held May 19 and June 15. The bill was considered by the House on June 17, 22, and was passed on June 23, amended, by vote of 353-57. Subsequently, passage was vacated and S. 881, the Senate counterpart bill, was passed in lieu after being amended to contain the language of H.R. 4326, as passed. On June 29, the Senate concurred in the House amendment to S. 881, clearing the measure for the President. On July 22, 1982, the bill was enacted as Public Law 97-219.

Committee publication Number 97-135.

1.6—Public Law 97–248, the Tax Equity and Fiscal Responsibility Act of 1982 (Federal Aviation Administration R&D Portion). (H.R. 4961)

To provide for tax equity and fiscal responsibility, and for other purposes. Title V of H.R. 4961 contained the provisions of H.R. 2643 and H.R. 6193, to provide for the improvement of the Nation's airport and airway system, and for other purposes.

Summary and background of legislation

H.R. 2643 was jointly referred to the Committees on Public Works and Transportation, and Science and Technology. Research, Engineering and Development, and Demonstration, over which the Committee has jurisdiction, is contained in Section 5(d) of the bill. The FAA requested a total of $95,000,000 from the Airport and Airway Trust Fund for Research, Engineering and Development for FY 82. A revised request for $85,000,000 was submitted subsequently. This amount was identical to the amount appropriated for fiscal year 1981.

Recognizing the need to slow the growth in Federal expenditures, the Committee recommended the revised request for FY 82 as follows: Air Traffic Control, $51,660,000; Navigation, $9,775,000; Aviation Weather, $6,715,000; Aviation Medicine, $1,250,000; ATC Computer Modernization, $15,600,000; Total: $85,000,000.

Within the recommended total, the Committee directed that funds be reprogrammed to permit completion of the Flight Level 290 Study and expedited development of the Doppler Weather Radar (NEXRAD).

The revised request also contained a proposal to fund $19.81 million of regulatory support research and development from the Trust Fund. These activities had previously come under a budget category known as Facilities, Engineering and Development which was funded from the General Fund. The Committee considered this use of Trust Fund money to be at variance with the purpose and philosophy of the Trust Fund. The request was therefore denied.

For FY 83, the FAA requested a total of $133,500,000 from the Airport and Airways Trust Fund for Research, Engineering and Development. Contained in this amount was $16,810,000 for regulatory support research. This budget category was funded previously from general revenues. The Committee believed that such activities continue to benefit the public at large and therefore recommended that Trust Funds not be used for this purpose.

Of the remaining $116,690,000, the largest portion was requested for financing the front-end costs of implementing the National Airspace System Plan. This Plan was produced partly in response to H. Res. 202 which called on the FAA to develop and obtain Administration approval of an urgently needed, long-range program plan to modernize the enroute Air Traffic Control computer system. In response, the FAA took the opportunity to lay out a comprehensive, top-level blueprint for upgrading the entire ATC system. The resulting NAS Plan addresses major shortcomings of the present system and outlines a well conceived strategy for dealing with them. It is a significant and long overdue effort at long-range planning.

The Committee felt the NAS Plan was an acceptable basis for proceeding and recommended its adoption; however, the Committee stated its intention to review its status at frequent intervals. Accordingly, a one-year authorization of $116,690,000 was recommended. Further, the Administrator of the FAA was requested to submit to the Committee not later than December 31, 1982, and annually thereafter, a report that summarizes activities under the NAS Plan.

Legislative history

H.R. 2643 was introduced on March 19, 1981, by the Chairman of the Subcommittee on Aviation of the Committee on Public Works and Transportation. It was then referred jointly to the Committees on Public Works and Transportation, and Science and Technology where it was referred to the Subcommittee on Transportation, Aviation and Materials.

The Subcommittee on Transportation, Aviation and Materials had conducted a program review hearing the previous September to begin the authorization process by reviewing recent accomplishments. On February 17, 18, and 19, 1981, Subcommittee hearings were held prior to referral of the bill. At Subcommittee markup on March 25, 1981, the bill was reported, with a technical amendment; and at Full Committee markup April 7, 1981, the bill was reported, as amended. H. Rept. 97-24, pt. 1 was filed April 7, 1981; and H. Rept. 97-24, pt. 2 was filed by the Committee on Public Works and Transportation May 19, 1981.

On June 25 and 26, 1981, the measure was considered by the House as Subtitle F of Title XII of H.R. 3982, the Omnibus Reconciliation Act of 1981, but Subtitle F was deleted from Title XII by amendment to H.R. 3982.

H.R. 6193 was introduced April 28, 1982, by the Committee Chairman for himself and Congressman Glickman, Chairman of the Subcommittee on Transportation, Aviation and Materials. The purpose was to provide for an FY 83 R&D authorization. Prior to introduction, the Subcommittee on Transportation, Aviation and Materials held two days of hearings, February 23-24, 1982, on the FAA's FY 83 R&D budget. On April 28, 1982, the Subcommittee on Transportation, Aviation and Materials held a hearing to review the NAS Plan and FAA's request for funds to begin that Plan. Subcommittee markup was held and the bill was reported May 4, 1982; Full Committee markup was held and the bill was reported May 13, 1982. H. Rept. 97-523 was filed in the House May 17, 1982.

A Rules Committee hearing was held June 2, 1982, and a rule was granted. The provisions of H.R. 2643 and H.R. 6193 were incorporated as Title V of H.R. 4961, the Tax Equity and Fiscal Responsibility Act of 1982, and passed by the House on July 23, 1982. On August 5, House and Senate conferees settled the differences between their respective versions of the Airport and Airway System Development provisions. The conference report (H. Rept. 97-760) was filed in the House August 17, 1982. On August 19, 1982, the House and Senate agreed to the Conference Report, clearing the measure for the President. On September 5, 1982, the measure was signed by the President (Public Law 97-248).

1.7—Public Law 97-286, the National Bureau of Standards Authorization Act for Fiscal Year 1983. (H.R. 5726; S. 2271)

To authorize appropriations to the Secretary of Commerce for the programs of the National Bureau of Standards for fiscal year 1983, and for other purposes.

Summary and background of legislation

The Committee initiated the authorization process for the National Bureau of Standards in 1980, with legislation authorizing the funding for the Bureau for Fiscal Years 1981 and 1982. Prior to fiscal year 1981 the NBS had functioned with a continuing authorization and its annual budget review by the Congress was limited to the hearings before the House and Senate Appropriations Committees.

For Fiscal Year 1983, the President requested the sum of $111.5 million. This represented a decrease of $8.8 million below the 1982 program. The Committee, aware of the central role which NBS plays in supporting and advancing technology in American industry, conducted a close analysis of the proposed budget. A number of issues were given especially careful scrutiny.

(a) Computer Institute. The budget included a reduction from $12 million to $7 million for the Institute for Computer Science and Technology (ICST). In addition, a separate legislative proposal, H.R. 6006, was submitted by the Administration which would have transferred the ICST from NBS to the General Services Administration.

(b) The Center for Fire Research has in recent years been funded strongly by the Federal Emergency Management Agency (FEMA), but for FY 1983 that funding was eliminated. The restoration of those funds, through direct appropriations to the NBS was recommended.

(c) Core Research Program for Innovation and Productivity. In earlier years the Committee had provided separate authorization for the Bureau's automated manufacturing test facility. This year the inclusion of that activity into a broader "Robotics R&D" program was recommended.

Legislative history

Following the hearings on February 9 and 10, 1982 a bill reflecting the Subcommittee's conclusion and priorities was introduced by Chairman Fuqua as H.R. 5726. This bill was marked up by the Subcommittee on March 17, 1982, and by the full Committee on April 1. On May 19 the House debated and passed the bill. Passage was then vacated and S. 2271, which had passed the Senate on April 29, 1982 was taken from the table, amended to contain the text of H.R. 5726, and returned to the Senate. On August 12, 1982 the Senate concurred in the House amendment with an amendment. On September 22, 1982 the House concurred in the Senate amendment by unanimous consent. The legislation was signed by the President on October 6, 1982 and became Public Law 97-286.

1.8—PUBLIC LAW 97-324, THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION ACT, 1983. (H.R. 5890)

To authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and progam management, and for other purposes.

Summary and background of legislation

Public Law 97-324 authorizes $6,772,900,000 to be appropriated to the National Aeronautics and Space Administration for fiscal year 1983. The authorization included $5,504,000,000 for research and development under the following eleven (11) line items: Space Shuttle, Space Flight Operations, Expendable Launch Vehicles, Physics and Astronomy, Planetary Exploration, Life Sciences, Space Applications, Technology Utilization, Aeronautical Research and Technology, Space Research and Technology, and Tracking and Data Acquisition. The authorization included $100,000,000 for construction modification and rehabilitation of facilities including land acquisition under 13 line items, and $1,168,900,000 for Research and Program Management which includes the salaries of employees of the National Aeronautics and Space Administration.

For Fiscal Year 1983, NASA requested $232,000,000 for Aeronautical Research and Technology. This amount represented an 18.6 percent reduction from the amount authorized in fiscal year 1982.

Funding for the aeronautics program has been on a downward path in recent years. For example, actual spending in fiscal year 1980 was $308 million. Exacerbating this trend, the Administration took unilateral action in 1982 to fundamentally change NASA's role in aeronautics as a way of achieving further large reductions in this Federal effort. The vehicle for achieving this action was a revised fiscal year 1982 operating plan, about which the Committee was not consulted. The change implemented therein was a withdrawal from all technology validation activities, except where a clear military application existed. The underlying assumption was that industry would pick up the slack.

The Committee was presented with no evidence to indicate that this would be the case. Moreover, the facts show that past investments in research and technology have led to very large commercial benefits for the United States. The Committee sees no justification for making changes to such a time-proven and cost-effective system.

Therefore, the Committee directed the following restorations: Energy Efficient Transport ($1.1 million); Composite Primary Aircraft Structures ($2.0 million); Advanced Turboprops ($9.8 million); Energy Efficient Engine ($7.0 million); Terminal Configured Vehicle ($5.0 million); Turbine Engine Hot Section Technology ($4.7 million); Advanced Rotocraft Technology and Helicopter Transmission Research ($4.5 million); Broad Property Fuels Technology ($4.2 million), Powered Lift and Tilt Rotor Technology ($3.8 million); and, Research and Technology Base ($6.0 million). To partially offset these additions and to encourage the Department of Defense to reimburse NASA for work that is conducted on its behalf, the Committee directed the following general reduction to be taken from activities that are primarily directed at military application: Low Speed Systems Technology and High Speed Systems Technology ($13.0 million). The new total is $267,100,000.

Legislative history

H.R. 5890 was introduced on March 18, 1982 and referred to the Subcommittee on Space Science and Applications and the Subcommittee on Transportation, Aviation and Materials on March 22, 1982. Hearings were held by the Subcommittees on Space Science and Applications and Transportation, Aviation and Materials in February and March.

H.R. 5890 was reported to the Full Committee on March 16, 1982 by the Subcommittee on Space Science and Applications and on March 25, 1982 by the Subcommittee on Transportation, Aviation and Materials. The Full Committee subsequently ordered the bill reported to the House with amendments on April 28, 1982. Report was filed in the House on May 5, 1982 (H. Rept. 97-502). An open rule with one hour of general debate was granted by Rules Committee on May 11, 1982. The House passed H.R. 5890 on May 13, 1982 by vote of 277 yeas, 84 nays. It was referred to the Senate Committee on Commerce, Science and Transportation on May 17, 1982 and passed the Senate on June 9, 1982, with amendment (which inserted the text of S. 2604). On June 22, 1982 the House disagreed to the amendment of the Senate and requested a conference with the Senate. The House appointed as conferees: Messrs. Fuqua, Flippo, Glickman, Nelson, Brown of California, Winn, Goldwater, and Hollenbeck; solely for the consideration of Section 5 of the Senate amendment and modifications committed to conference, the House appointed conferees: Messrs. Stratton, Boland, Gore and Robinson. On September 22, 1982 the Senate insisted on its amendments to H.R. 5890 and agreed to the conference requested by the House thereon, and appointed as conferees: Senators Packwood, Schmitt, Goldwater, Cannon, and Riegle. On September 28 and 29 the Conferees met and they agreed on Septmber 29, 1982. The Conference Report was filed in the House on September 29, 1982. On September 30, 1982 the Senate agreed to the Conference Report and on October 1, 1982 the House agreed to the Conference Report by a vote of 284 yeas and 83 nays. The bill was signed by the President on October 15, 1982 and became Public Law 97-324.

1.9—PUBLIC LAW 97——,THE EARTHQUAKE HAZARDS REDUCTION ACT OF 1977 AUTHORIZATION. (H.R. 6272)

To amend the earthquake hazard reduction act of 1977 to extend auythorizations of appropriations and for other purposes.

Summary and background of legislation

As reported, H.R. 6272 authorized $63,373,000 for Fiscal Year 1983. The total included $60,599,000 for the National Earthquake Hazards Reduction Program and $2,774,000 for the Multihazard Research Planning and Mitigation Program.

The bill's total represented $3,939,000 above the Administration's proposals. As in FY 1982, the Committee was concerned that the high seismic risk areas in Southern California were not adequately instrumented. Therefore, the Committee increased the Administration's proposal for the U.S. Geological Survey by $3 million. The additional $3 million would be used to undertake design studies of a prototype prediction network for continuous geophysical monitoring of the fault systems threatening Southern California population centers. In addition, under the Multihazard program, the Committee authorized $939,000 for the Emergency First Response Program at the U.S. Fire Administration. The bill did not include authorization for the bulk of USFA programs within the Federal Fire Prevention and Control Act because the previous year's authorization bill (Public Law 97-80), provided authorization for FY 82 and FY 83. The Administration did not request funding for the USFA in FY 83, but Congress appropriated over $4 million.

Legislative history

The Subcommittee on Science, Research and Technology held a joint hearing on the National Earthquake Hazards Reduction Act on March 11, 1982, with the Subcommittee on Science, Technology and Transportation; of the Senate Committee on Commerce, Science and Transportation.

H.R. 6272 was introduced on May 4, 1982 by Mr. Walgren (for himself and Mr. Brown of California) and referred jointly to the Committees on Science and Technology and Interior and Insular Affairs.

In markup on May 5, 1982, the Subcommittee by unanimous voice vote adopted H.R. 6272. On May 13, 1982 by unanimous voice vote the bill was ordered reported by the Committee. On May 17, 1982 the report was filed in the House (H. Rept. 97-535, Part 2). On May 12, 1982 the Committee on Interior and Insular Affairs by voice vote, ordered the bill reported without amendment (H.R. 97-535 Part 1). On September 14, 1982, H.R. 6272 passed the House under Suspension of the Rules by voice vote. Subsequently, passage was vacated and S.2273 passed after striking all after the enacting clause and substituting the provisions of the House passed H.R. 6272. On October 1, 1982, that Senate agreed to the House amendment, with amendments which sought to reduce the total funding by $2,000,000 to $61,373,000 by reducing the add-on for prediction in California from $3 million to $1 million. The same day, House agreed to the Senate amendments, with an amendment which made a technical correction. The Senate agreed to the House amendment on ——— ,1982 clearing the measure for the President. Public Law 97——— was signed by the President on ———.

1.10—PUBLIC LAW 97-237, COMMENDING COMPLETION OF TEST FLIGHT PHASE OF THE SPACE SHUTTLE PROGRAM. (H.J. RES. 541)

Concerning the successful completion of the test flight phase of the Space Shuttle Program.

Summary and background of legislation.

To congratulate the National Aeronautics and Space Administration and all persons involved in the success of the test flight phase of the Space Shuttle Program.

Legislative history

H.J. Res. 541 was introduced in the House on July 20, 1982 and referred to the Committee on Science and Technology. On July 26, 1982 the measure was called up by the House by unanimous consent. The measure passed the House on July 26, 1982 by unanimous consent.

The Senate passed H.J. Res. 541, after agreeing to a Stevens (for Hayakawa and Cranston) unprinted amendment No. 1180, in the nature of a substitute. On August 10, 1982, the House agreed to the Senate amendments, clearing the measure for the President. On August 20, 1982, the President signed H.J. Res. 541 and it became Public Law 97-237.

1.11—PUBLIC LAW 97———, THE NUCLEAR WASTE POLICY ACT OF 1982. (H.R. 3809; H.R. 5016; H.R. 7187)

To provide for the development of repositories for the disposal of high-level radioactive waste and spent nuclear fuel, to establish a program of research, development, and demonstration regarding the disposal of high-level radioactive waste and spent nuclear fuel, and for other purposes.

Summary and background of legislation

The nuclear waste bill is the product of great effort on the part of the three committees of primary jurisdiction: the Committee on Science and Technology; the Committee on Energy and Commerce; and, the Committee on Interior and Insular Affairs. It logically joins the R&D elements of the Science and Technology bill, H.R. 5016, to the procedural and licensing provisions of the Energy and Commerce and Interior bills.

The Committee on Science and Technology first began consideration of nuclear waste issues when it was assigned nuclear jurisdiction under House rules in 1977. Since that time, the Committee has spent considerable effort developing nuclear waste R&D legislation, including the reporting of its first R&D bill in the 96th Congress.

In this Congress, because of what was learned from earlier attempts, a comprehensive bill was introduced to demonstrate how the research and development activities should be integrated into the overall nuclear waste repository program. This bill is H.R. 5016.

In its deliberations on this legislation, the Committee acted only on the R&D provisions for both nuclear waste and spent fuel. The legislation was introduced by Mrs. Bouquard, Chairman of the Subcommittee on Energy Research and Production, Mr. Fuqua, and 16 additional Members of the Committee. As a result of a consensus approach, this legislation received overwhelming endorsement when it was ordered reported by the Committee on Science and Technology by a 37-to-2 vote, on November 20, 1981. The report was filed in the House on December 15, 1981 (H. Rept. 97-411, Part 1).

It is important to note that the other committees of jurisdiction have recognized the programmatic need for the research and development elements of H.R. 5016, which include the concept of a test and evaluation facility. This research and development concept is the focus for the R&D activities which consist of site research and the ongoing generic supporting research, which has been authorized by the Committee on Science and Technology over the past 5 years. It is also tailored to demonstrate handling, storage, and other aspects of waste management in a site-specific manner, and will serve as a basis for resolving licensing issues. In both cases, the NRC has been given a significant role of concurrence with respect to the DOE R&D activities.

The Committee agreed with the other committees to provide the Secretary of Energy with the discretion to locate the Test and Evaluation (T&E) facility at a candidate repository site or on a separate site. If the Secretary chooses to go the route where the T&E facility is a precursor to the repository, the site will be included in all the siting procedures of title I and onsite construction is tied to those procedures. In the case of a separately sited T&E facility, the safeguards of the R&D title apply so that the public is involved and health and safety issues are properly addressed.

The Committee on Science and Technology title also contains a research, development, and demonstration program on the dry storage of spent fuel. This program encourages the Department of Energy to aid the utilities by developing valuable licensing data and authorizes onsite demonstration programs at up to three power plants. The Secretary may also condust a technology demonstration activity on dry storage at a Federal facility using up to 300 metric tons of spent fuel. This activity is an excellent complement to the last resort, Away-From-Reactor (AFR) storage provisions of title I. The funding for the program may come from the DOE, the utilities, and the interim storage fund. This program appears in title II very much as it was reported by the Committee on Science and Technology in H.R. 5016.

A few elements of the three major bills were placed in a joint title since they are items of shared jurisdiction. These three elements are: First, the funding mechanism which includes funds for title II, the R&D title; second, the mission plan; and third, the new civilian office for nuclear waste management.

The Committee on Science and Technology's report on H.R. 5016 (H. Rept. 411, Part 1), states the intention of the Committee relative to title II of the substitute (H.R. 7187) to H.R. 3809. There were only minor modifications made in the process of reaching agreement on the incorporation of the R&D provisions of H.R. 5016 into this substitute. In summary, the substitute bill contains the following provisions:

Test and Evaluation Facility. Authorizes the Secretary to build on Test and Evaluation (T&E) Facility, and provides funding through the fund created in title III.

DOE may use a candidate repository site for a T&E Facility, if the Secretary deems it appropriate, or locate it separately. If the candidate site is chosen, the same procedures are used for the T&E Facility as for the repository. It is located separately, the title II safeguards apply (similar to those found in H.R. 5016).

Purposes are to:

Focus the R&D program;

Integrate the repository components into a functioning system;

Resolve technical licensing issues regarding the repository;

Validate scientific models;

Refine repository component designs;

Supplement geologic characterization process;

Evaluate and test waste handling systems;

Establish repository operating capability.

T&E Facility construction of a separately-located T&E expected could begin about 2 years after passage of the Act.

On-site construction for a T&E Facility located at a repository site can begin after the repository construction authorization is issued by the NRC (expected about 7 years after passage of the Act).

T&E is to be designed for a capacity of up to 100 canisters of high-level waste;

Operation terminates within five years after initial repository operation begins;

NRC actively involved in assessing public health and safety concerns;

All non-generic R&D, including T&E costs paid from Nuclear Waste Fund;

Alternative means and technologies are to be continued and accelerated, with such funds as are appropriated.

Dry Storage Research, Development and Demonstration Program for Spent Fuel. Up to 3 powerplant sites may be chosen for the demonstration program subject to reaching agreement with owners.

Cask, caisson and silo storage are options for dry storage.

R&D on rod consolidation in existing water storage pools may be undertaken.

Utility to utilize DOE data to license the on-site facilities and pay all construction and operation costs.

The Secretary of Energy may conduct technology demonstration on dry storage at Federal facilities up to 300 metric tons.

Legislative history

H.R. 5016 evolved from a series of legislative initiatives of the Committee on Science and Technology during the 96th and 97th Congresses. These initiatives included H.R. 7418, the "Nuclear Waste Research Development and Demonstration Act of 1980;" H.R. 6627 and H.R. 7449, the Fiscal Year 1981 Department of Energy Authorization bills; H.R. 4019, the "Nuclear Waste Management Research, Development and Demonstration Act of 1979;" H.R. 1852, a related bill with the same title as H.R. 4019; H.R. 4818, the "Nuclear Waste Terminal Storage and Technology Demonstration Act of 1979;" H.R. 1909, the "Nuclear Waste Research, Development, and Demonstration Act of 1981;" and various other bills on the same subject.

The Subcommittee on Energy Research and Production of the Committee on Science and Technology held hearings on H.R. 1909 on February 26, March 19, and June 17 and 18, 1981. The Subcommittee marked up the bill on July 15 and 16, 1981, and the bill was forwarded to the Full Committee, amended, on July 16, 1981.

On November 18, 1981, H.R. 5016, the "High-Level Radioactive Waste Management and Policy Act," was introduced and referred jointly to the Committees on Science and Technology, Energy and Commerce, and Interior and Insular Affairs.

On November 20, 1981, the Full Committee ordered H.R. 5016 reported, with amendments, by a vote of 37 ayes to 2 nays. The report was filed in the House on December 15, 1981 (H. Rept. 97-411, Part I). The report was written only for the jurisdictional items of the bill, that is, all the R&D elements.

The two other Committees of jurisdiction over nuclear waste legislation also reported separate pieces of legislation: H.R. 3809 was reported by the Committee on Interior and Insular Affairs on April 27, 1982 (H. Rept. 97-491, Part I); H.R. 6598 was reported by the Committee on Energy and Commerce on August 20, 1982 (H. Rept. 97-785, Part I).

The Chairmen of the three committees involved met and agreed upon a unified nuclear waste bill to present to the Committee on Rules for consideration of the House: H.R. 7187, the "Nuclear Waste Policy Act of 1982." H.R. 7187 was introduced in the House on September 24, 1982, and jointly referred to the Committees on Energy and Commerce, Interior and Insular Affairs, Rules, and Science and Technology. The Committee on Rules granted a rule (H. Res. 601) which would make in order H.R. 7187 as an amendment in the nature of a substitute to H.R. 3809 for purposes of amendment on September 30, 1982. On the same day, the House agreed to H. Res. 601 and began general debate on H.R. 3809 and agreed to a number of technical amendments.

The House continued consideration of H.R. 3809 on November 29, 30, and December 2, 1982. H.R. 3809 passed the House, with amendments, by voice vote on December 2, 1982.

H.R. 3809 was placed on the Senate Calendar on December 6, 1982. It passed the Senate, with amendments, on December 20, 1982. The House, by a vote of 256 yeas to 32 nays, voted to accept the Senate amendments on December 20, 1982, when it voted on the rule, H. Res. 636. H.R. 3809 was signed into law on December —, 1982 (Public Law 97-——).

1.12—A NATIONAL SCIENCE CENTER FOR COMMUNICATIONS AND ELECTRONICS. (H. CON. RES. 204; S. CON. RES. 130)

Expressing the sense of Congress that, to encourage educational programs in science and technology, a National Science Center for Communications and Electronics should be established.

Summary and background of legislation

H. Con. Res. 204 expresses the sense of Congress that the establishment of a National Science Center for Communications and Electronics would assist in promoting the interest of the public at large in science and technology. The Center would also be an effective means to help recruit young people into the fields of communications and electronics, to develop new skills for the current work force, and to reinforce the communications and electronics training of military students from the armed services and from allied nations.

Legislative history

On October 20, 1981, H. Con. Res. 204 was introduced in the U.S. House of Representatives by Mr. Doug Barnard, Jr. and referred to the Committee on Science and Technology. On August 3, 1982, the Committee reported out H. Con. Res. 204 by unamimous voice vote, and H. Rept. 97–745 was filed on August 13, 1982. On December 1, 1982, the Senate passed a similar resolution, S. Con. Res. 130, which was referred jointly to the Committee on Energy and Commerce and the Committee on Science and Technology. The Committee on Energy and Commerce took no action on the resolution, but permitted the Committee on Science and Technology to take up the resolution under suspension of the rules. S. Con. Res. 130 passed the House on December 13, 1982.

1.13—COMMEMORATION OF THE INTERNATIONAL GEOPHYSICAL YEAR.
(H. RES. 514)

To commemorate July 1, 1982 as the twenty-fifth anniversary of the International Geophysical Year.

Summary and background of legislation

Recognizing the importance of the International Geophysical Year (IGY) to the enhancement of international scientific cooperation, H. Res. 514 calls for commemoration of the twenty-fifth anniversary of the beginning of IGY. The resolution further calls for reaffirming the commitment of the House of Representatives to continued efforts of international cooperation in all the sciences.

Legislative history

H. Res. 514 was introduced on June 23, 1982 by Mr. Wirth. It was referred jointly to the Committee on Science and Technology and the Committee on Post Office and Civil Service. Testimony was heard before the Committee on Science and Technology on August 3, 1982. On the same day the Committee met for the purpose of marking up H. Res. 514. The resolution was unanimously agreed to and ordered reported favorably (Rept. 97–758) to the full House. The Committee on Post Office and Civil Service took no action on the resolution. On December 21, 1982 the House agreed to H. Res. 514 by unanimous consent.

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CHAPTER II—OTHER LEGISLATIVE ACTIVITIES OF THE COMMITTEE ON SCIENCE AND TECHNOLOGY

2.1—The National Science Foundation Authorization Act, Fiscal Year 1982. (H.R. 1520)

To authorize appropriations for activities for the National Science Foundation for the fiscal year 1982.

Summary and background of legislation

The Committee on Science and Technology has responsibility for annually authorizing appropriations for the activities of the National Science Foundation. H.R. 1520 provides authorization of the Foundation's activities for fiscal year 1982. The Committee's Hearings and markup of H.R. 1520 were based on the President's original budget request (January 15, 1981) and the President's revised request of March 10, 1981. The original request of $1,353.5 million was reduced to $1,033.6 million in the revised request, resulting in major shifts in a number of critical Foundation activities.

The Committee was concerned with major reductions or eliminations of the following programs: science and engineering education; behavioral, social and economic sciences, instrumentation; international science and technology cooperation; innovation; intergovernmental programs; and women and minorities in science. The Committee noted with particular alarm the proposal to eliminate all science and engineering education programs from the Foundation. This came at a time when severe problems were emerging related to the nation's technical, engineering and scientific human resource and education needs. Similarly, the administration proposed a 75 percent reduction in the behavioral, social, and economic sciences at a time when greater understanding of these areas was essential to the nation's long-term economic and structural well-being.

In view of the severe effects being proposed in the administration's request the Committee acted to restore funding to a number of these programs. The overall budget was increased $127.1 million to a total $1,160.7 million for FY 1982. The recommended increases provided $1,082.2 million for Research and Related activities, $75.0 million for Science and Engineering Education; and $3.5 million for Special Foreign Currency.

Legislative history

H.R. 1520 was introduced by Mr. Fuqua, Chairman of the Committee and Mr. Winn, Ranking Minority Member of the Committee on January 30, 1981. Hearings on the Foundation's budget were held on January 28, 1981 and March 3, 5, 10, 12 and 17, 1981. The Subcommittee on Science, Research and Technology marked up the bill on March 24, 1981 recommending an increase of

$127.1 million over the revised requested amount. The Full Committee marked up and ordered reported the bill as amended on April 28, 1981. H. Rept. 97-34 was filed in the House on May 14, 1981. On June 11, 1981, the Committee transmitted the authorization language to the Committee on the budget which subsequently included the text of H.R. 1520 as part of the Omnibus Reconciliation Act of 1981 (H.R. 3982). This provision was deleted by a floor vote on June 26, 1981, and subsequently dropped by the Senate in conference on July 29, 1981. On July 16, 1981 a rule was granted by the Rules Committee and the bill was considered on the House floor September 23, 1981. H.R. 1520 was amended by reducing the overall total to $1,085 million such that the Research and Related Activities totaled $1,046.5 million; Science and Engineering Education $35.0 million and Special Foreign Currency $3.5 million. The bill as amended was approved by a vote of 262 to 149. The bill was placed on the Senate calendar on September 25, 1981. No subsequent action was taken and on April 22, 1982 H.R. 1520 was indefinitely postponed by the Senate.

2.2—THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION AUTHORIZATION, FISCAL YEAR 1982. (H.R. 2803)

To authorize appropriations for atmospheric, climatic and ocean pollution activities of the National Oceanic and Atmospheric Administration for the Fiscal Year 1982 and for other purposes.

Summary and background of legislation

This bill authorizes the appropriation in fiscal year 1982 of $498.5 million to the National Oceanic and Atmospheric Administration (NOAA) for research, development, monitoring and forecasting activities in its atmospheric, space, and marine programs. The Administration's request for these programs in 1982 is also $498.5 million. The 1981 appropriation to date for these activities is $436.3 million, of which $4.1 million has been proposed for rescission.

The bill specifically distributes the authorization among the various activities. The authorization for basic environmental services, which provides satellite and radar support for weather observation and communications, is $159.8 million, and for public weather forecast and warning services, $98.9 million is authorized. Environmental satellite services, including funds for LANDSAT (a civilian land observing system), is authorized $127.3 million. The bill provides $44.5 million for specialized services that supply environmental information to the agricultural, aviation and communications industries and $25.0 million for other information services. The authorization for marine ecosystems analysis and ocean dumping is $18.3 million, and funding for other related programs totals $24.6 million.

The National Oceanic and Atmospheric Administration was created by Reorganization Plan No. 4 as part of the Presidential reorganization in 1970. Since its establishment NOAA has obtained most of its funding for its major programs through direct appropriations with little or no authorization or congressional oversight. Authorization actions that did occur were limited to a few specific areas of interest such as ocean pollution and ocean waste disposal. Because of this lack of a comprehensive view of NOAA and its programs, the Committee decided to authorize those programs and activities that fall directly in the Committee's jurisdiction, namely the atmospheric, climatic and ocean pollution activities. These program elements comprise well over one-half of NOAA's total program.

Legislative history

The Subcommittee on Natural Resources, Agriculture Research and Environment held hearings on atmospheric, climatic and ocean pollution activities of the National Oceanic and Atmospheric Administration on March 5 and March 12, 1981, (Science and Technology Committee reports No. 83 and No. 95). In response to these hearings, H.R. 2803 was introduced on March 24, 1981, by Mr. Scheuer. H.R. 2803 was forwarded to the Full Committee on March 25, 1981, by a recorded vote of 9-1. The Committee on Science and Technology ordered the amended bill reported on May 13, 1981, by voice vote. On May 19, 1981, the report was filed in the House (H. Rept. 97-61). On July 27, 1981, H.R. 2803 passed the House by voice vote. However, no action was taken on the bill by the Senate.

The Subcommittee on Space Science and Applications had jurisdiction over a small part of H.R. 2803, the land remote sensing satellites section. On April 2, 1981, the Subcommittee marked up its portion of the bill and forwarded it to the Full Committee amended.

2.3—The Environmental Research, Development, and Demonstration Authorization Act of 1982. (H.R. 3115; H.R. 2804)

Authorizing fiscal year 1982 appropriations to the Office of Research and Development, Environmental Protection Agency.

Summary and background of legislation

H.R. 3115 authorized appropriations totalling $306,236,000 for fiscal year 1982. This represented a 16.2 percent reduction from the EPA 1981 budget estimate of $365,558,000 for research and a 19.0 percent reduction from the $375,041,000 authorized in last year's bill (Public Law 96-569). The amount of appropriations authorized for fiscal year 1982 was equal to the Administration's FY 1982 request.

As ordered reported, the bill, in addition to authorizing $306,236,000 for the research programs of EPA, promoted quality research by providing for a study of peer review in research planning, the commissioning of literature reviews to acquire and organize scientific and technical knowledge, and the verification of measurement protocols to ensure the accuracy and reproducibility of scientific data. The bill also authorized a study by the EPA Science Advisory Board on how environmental research can be better coordinated, integrated, and made available to users.

The Committee greatly prefers annual authorization of the Environmental Protection Agency research program as a way of ensuring that the program is well managed and is supporting the Agency's primary role of protecting public health and welfare.

Last year's (Public Law 96-569) continued the process of authorizing program funds; gave the Agency certain direction; promoted quality research; and amended Section 8(a) of Public Law 95-155 perfecting the language pertaining to the scientific advice given by the Science Advisory Board of the Environmental Protection Agency.

This bill again authorized program funds, gave the Agency certain direction, promoted quality research, and authorized a study by the EPA Science Advisory Board on how environmental research can be better coordinated, integrated and made available to users.

Legislative history

The Subcommittee on Natural Resources, Agriculture Research and Environment held hearings on the EPA budget request on March 11, 17, and 18, 1981. In response to these hearings, a draft bill was prepared, introduced (H.R. 2804), and presented to the Subcommittee on March 26, 1981 for markup. In that meeting, the Subcommittee ordered reported, by a 9 to 1 recorded vote. A clean bill, H.R. 3115 incorporating the Subcommittee recommendations was subsequently introduced on April 7, 1981 by Mr. Scheuer with three cosponsors (Mr. Brown of California, Mr. Blanchard, and Mr. Walgren). The full Committee on Science and Technology considered, amended, and ordered reported, by recorded vote (38-1), the bill H.R. 3115 on May 13, 1981. The report accompanying H.R. 3115 (H. Rept. 97-93) was filed in the House on May 19, 1981.

On July 27, 1981, H.R. 3115 passed the House, amended, by voice vote under Suspension of Rules. Subsequently, the bill was placed on the Senate calendar and on May 15, 1982 the Senate postponed indefinitely consideration of H.R. 3115.

2.4—THE DEPARTMENT OF ENERGY CIVILIAN RESEARCH AND DEVELOPMENT PROGRAMS AND PROJECTS 1982 AUTHORIZATION ACT. (H.R. 3146)

Authorizing appropriations to the Department of Energy for civilian research and development programs and projects for fiscal year 1982, and for the continuation in fiscal year 1982 of prior year research and development projects, in accordance with section 660 of the Department of Energy Organization Act.

Summary and background of legislation

In considering the fiscal year 1982 budget request for the Department of Energy, the Committee on Science and Technology reported two bills. H.R. 3146 contained authorizations for those programs in the Committee's sole jurisdiction; H.R. 3447 contained authorization for those programs jointly referred to the Committee on Science and Technology, the Committee on Energy and Commerce, and the Committee on Interior and Insular Affairs. The bill, H.R. 3146 authorized $3,606 billion for civilian research and development programs. The figure was $362 million less than President Reagan's request.

Additionally, since the organization of the Department of Energy's organization the Committee has authorized the environmental research programs. These programs lie primarily within the jurisdiction of the Office of Health and Environmental Research.

The Committee authorized a total of $289,400,000 for environmental research and development. The budget was divided into three major categories: Environment, Safety and Health; Biological and Environmental Research; and Life Sciences Research and Nuclear Medicine Applications.

Subsequent to reporting H.R. 3146, the Committee was instructed to make its authorization recommendations in the Omnibus Reconciliation Act of 1981, pursuant to directions contained in the first concurrent resolution on the budget for the fiscal year 1982 (H. Con. Res. 115, 97th Congress). Provisions of H.R. 3146 were submitted by the Science and Technology Committee for incorporation into the Omnibus Reconciliation bill. However, an amendment offered by Congressmen Gramm and Latta to the Reconciliation bill passed the House on June 26, 1981. This amendment provided fiscal year 1982 funding levels for DOE Civilian R&D programs which were different in several areas from those contained in H.R. 3146. The amended Reconciliation bill was enacted into law on August 13, 1981.

Major differences between provisions contained in H.R. 3146 as reported from the Science Committee and provisions contained in the Omnibus Reconciliation Act include the following:

H.R. 3146 terminated authorization for the Clinch River Breeder Reactor (CRBR) Project and distributed funding from this deauthorization to other energy R&D programs. The Administration's request for the CRBR for fiscal year 1982 was $254 million; the Committee deleted this funding and provided $44.5 million for termination costs for the Project and $50 million for a "Large Developmental Plant" (LDP) conceptual design study. Remaining funds from the CRBR line item were distributed to the fossils, solar, geothermal, conservation, magnetic fusion, electric energy systems, and energy storage systems program activities.

The Omnibus Reconciliation Act restored $228 million of the fiscal year 1982 authorization funding for the CRBR Project and provided higher funding levels than those requested for other energy R&D program activities as well. This was accomplished in part by moving the Strategic Petroleum Reserve oil acquisitions fund off-budget and applying the savings to these other energy programs, particularly solar and conservation.

Legislative history

The fiscal year 1982 Department of Energy budget was submitted to the House of Representatives on January 15, 1981 by President Carter. On March 15, 1981 President Reagan submitted a revised request. A formal authorization request in bill form for the DOE civilian programs was transmitted on April 28, 1981.

On May 4, 1981, Chairman Fuqua, Mr. Udall and Mr. Dingell introduced the DOE authorization bill for civilian programs for fiscal year 1982 (H.R. 3447) by request; the bill was referred in part to the Committee on Science and Technology.

On April 8, 1981, Chairman Fuqua introduced the bill, H.R. 3146 to authorize appropriations to the Department of Energy for civilian research and development programs and projects for fiscal year

1982. This bill was referred to the Committee on Science and Technology.

Extensive Committee hearings were held during February and March 1981 on the Department of Energy authorization request. On May 6, 7 and 14 the Committee met to mark up the bills. After completing this action the Committee ordered reported the bill, H.R. 3146, as amended, On May 14, 1981 by a recorded vote, 31 yeas and 9 nays. The Committee Report (H. Rept. 97-94) was filed in the House on May 19, 1981.

Subsequent to action by the Committee on Science and Technology on the Department of Energy authorization request, the Committee was instructed to make authorization recommendations in the Omnibus Reconciliation Act of 1981, pursuant to § 301 of the first concurrent resolution on the budget for the fiscal year 1982 (H. Con. Res. 115, 97th Congress), and pursuant to the reconciliation requirements which were imposed by such concurrent resolution as provided in § 310 of the Congressional Budget Act of 1974.

Provisions of H.R. 3146 were submitted as part of the Committee on Science and Technology's title in the Omnibus Reconciliation bill. However, an amendment to the Reconciliation bill was introduced on the House floor by Congressmen Gramm and Latta and passed the House on June 26, 1981. The Gramm-Latta Amendment provided fiscal year 1982 funding levels for DOE Civilian R&D programs which were different in several program areas from those contained in H.R. 3146.

2.5—THE DEPARTMENT OF ENERGY CIVILIAN PROGRAMS AUTHORIZATION ACT FOR FISCAL YEAR 1982. (H.R. 3447)

Authorizing appropriations to the Department of Energy for civilian programs for fiscal year 1982 and fiscal year 1983, and for other purposes.

Summary and background of legislation

H.R 3447, as introduced, contained authorization for all civilian energy research and development programs. Title I was referred solely to the Committee on Science and Technology. Titles VI, VII, VIII, IX, and X were jointly referred to the Committee on Energy and Commerce, the Committee on Interior and Insular Affairs, and the Committee on Science and Technology. The Committee on Science and Technology struck Title I, and amended the Titles referred to it jointly.

Solar Energy: ($5.7 Million Below Budget Request).—The Committee reduced the request for solar international programs by $4 million to terminate these activities within the Department. In the solar information program, the activity was reduced by $1.7 million and $3.5 million was set aside for the operation of the National Solar Heating and Cooling Information Center.

Energy Conservation: ($19.9 Million Above Budget Request).—The Committee reduced the request authorization for urban waste research, development and demonstration by $2.5 million. The Committee added $2.4 million for implementation and deployment activities within the industrial energy conservation program. The Committee added $15 million to continue the Energy Extension

Service in FY 1982. In the multi-sector program the Committee added $5 million to continue the appropriate technology small grants program in FY 1982.

Departmental Administration: ($43.1 Below Budget Request).—In operating expenses the Committee reduced various program management activities by $35 million and redirected funds for community assistance activities for Los Alamos, New Mexico and Oak Ridge, Tennessee. The Committee also reduced various in-house energy management construction projects by $8.1 million.

Small-Scale Hydropower—$1 million increase for Demonstration.—The Committee recommended operating expenses for technological demonstration using small-scale hydropower, particularly ultra low-head hydropower, for generating of electricity.

Nuclear fission—Civilian Waste Management ($13.5 million).—The Committee reduced the funding levels of two programs. Assistance to the States in the Waste Systems Evaluation and Public Interaction program was reduced by $0.5 million and the West Valley Demonstration Project was reduced by $3.0 million.

Assistance to the States in the Waste Systems Evaluation and Public Interaction—$0.5 million decrease.—The Committee action to reduce the scope of activities in the terminal isolation program and focus on early identification and selection of a site for a technology demonstration repository facility has reduced the need for as extensive Federal/State interactions. Accordingly, the Committee reduced the funding by $0.5 million.

West Valley, New York, Demonstration—$3.0 million decrease (with directions for reprogramming).—The Committee reduced the funding level for this project by $3.0 million. However, the Committee directed that the Department reprogram $3.0 million from the Civilian Waste Management program to the West Valley Demonstration project for a total of $13.0 million in order to initiate and complete all activities previously identified and scheduled for fiscal year 1982.

Uranium Enrichment Activities ($1.805 billion).—The Committee reduced construction funds for the Portsmouth Gas Centrifuge Enrichment Plant by $68 million delaying non-critical path expenditures from the 4th quarter of fiscal year 1982 to the 1st quarter of fiscal year 1983. The project will not be delayed by this deferral of expenditures.

Legislative history

The fiscal year 1982 Department of Energy Budget was submitted to the House of Representatives on January 15, 1981 by President Carter. On March 15, 1981 President Reagan submitted a revised request. A formal authorization request in bill form for the DOE civilian programs was transmitted on April 28, 1981.

On May 4, 1981 Chairman Don Fuqua, Mr. Udall and Mr. Dingell introduced the DOE authorization bill for civilian programs for fiscal year 1982 (H.R. 3447) by request; the bill was referred in part to the Committee on Science and Technology.

The titles acted upon by the Committee include authorization amounts and related language for the civilian programs at the Department of Energy with which the Committee shares jurisdiction with the Committees on Energy and Commerce, and Interior and Insular Affairs. These programs are as follows: solar international; solar information; urban waste RD&D, industrial energy conservation, energy extension service and multi-sector activities of the conservation program; demonstration activities within the small-scale hydropower program; gaseous diffusion and gas centrifuge operations and support of the uranium enrichment program; certain activities in the civilian waste management program; and departmental administration.

Extensive Committee hearings were held during February and March, 1981 on the Department of Energy authorization requests. On May 6, 7 and 14, the Committee met to mark-up the bill. After completing this action, the Committee ordered reported the bill, H.R. 3447, as amended, on May 14, 1981, a quorum being present. The Committee report (H. Rept. 97–103, Part I) was filed in the House on May 19, 1981.

Subsequent to action by the Committee on Science and Technology on the Department of Energy authorization request, the Committee was instructed to make authorization recommendations in the Omnibus Reconciliation Act of 1981, pursuant to § 301 of the first concurrent resolution on the budget for fiscal year 1982 (H. Con. Res. 115, 97th Congress), and pursuant to the reconciliation requirements which were imposed by such concurrent resolution as provided in § 310 of the Congressional Budget Act of 1974.

Provisions of H.R. 3447 were submitted as part of the Committee on Science and Technology's title in the Omnibus Reconciliation bill. However, an amendment to the Reconciliation bill was introduced on the House floor by Congressmen Gramm and Latta and passed the House on June 26, 1981. The Gramm-Latta Amendment provided FY 1982 funding levels for DOE Civilian R&D programs which were different in several program areas from those contained in H.R. 3447.

2.6—THE CRITICAL MATERIALS ACT OF 1981. (H.R. 4281)

To establish a Council on Critical Materials under the Executive Office of the President for the purpose of developing and coordinating national materials policy and program plans within the Federal Government.

Summary and background of legislation

Our Nation's defense and economic well-being depend on more than twenty non-fuel minerals of which seven are imported at levels of 90 percent or more and the rest at levels of 50 percent or more of our annual needs. The importance of materials related matters in national domestic and foreign policy requires an effective organizational means at the level of the Executive Office of the President with the authority and responsibility for establishing, coordinating and implementing critical materials policy. Such a structure was specifically mandated by Public Law 96–479, the "National Materials and Minerals Policy, Research and Development Act of 1980." H.R. 4281, the "Critical Materials Act of 1982" is considered to represent the next logical step in the policy and administration processes provided by Public Law 96–479. Specifically, H.R. 4281 establishes a permanent, three-man Council on Critical Materials under and reporting to the Executive Office of the President.

The Council is given the responsibility (1) to assist and advise the President in establishing and implementing a coherent national materials policy consistent with other Federal policies; (2) coordinate Federal materials-related policies, programs and research and development activities; (3) review and appraise the programs and activities of the Federal Government in accordance with the policy and directions given in the National Materials and Minerals Policy, Research and Development Act of 1980 (Public Law 96-479); (4) formulate and recommend to the President national policies designed to improve conditions affecting the minerals and materials needs and resources of the Nation; (5) advise the President on domestic and foreign minerals and materials trends and their effects; and, (6) provide for such studies, analyses, reports and recommendations with respect to questions of materials-related policy and legislation as the President may request. there is authorized to carry out the provisions of this Act a sum not to exceed $1,000,000 for the fiscal year ending on September 30, 1984 and such sums as may be necessary thereafter.

Legislative history

H.R. 4281 was introduced on July 27, 1981 by Mr. Fuqua for himself and Mr. Glickman, Mr. Walgren, Mr. Brown of California, Mr. Santini, Mr. Roe, Mrs. Bouquard, Mr. Flippo, Mr. Young of Missouri, Mr. McCurdy, Mr. Dymally, Mr. Bedell, Mr. Bennett, Mr. Breaux, Mr. Daniel, Mr. Rahall, Mr. Hollenbeck, Mr. Forsythe, Mr. Ritter, Mr. Young of Alaska, Mr. Lujan, Mr. Bevill, Mr. Rudd, Mr. Skeen, and Mr. Lehman, on July 27, 1981. The bill was referred to the Committee on Science and Technology and subsequently to the Subcommittee on Transportation, Aviation and Materials.

Testimony associated with the implementation of Public Law 96-479, "The National Materials and Minerals Policy, Research and Development Act of 1980", was heard before the Committee on Science and Technology on July 28, 1981. The purpose of this hearing was to review the progress of the Executive Branch in preparing the response called for in Public Law 96-479 as well as to consider related legislation, H.R. 4281 in particular, which was introduced prior to the hearings. Oversight hearings on Public Law 96-479 and H.R. 4281 were held on April 20 and 22, 1982, before the Subcommittee on Transportation, Aviation and Materials and the Subcommittee on Science, Research and Technology.

Witnesses represented the President's Office of Science and Technology Policy, the Departments of Commerce, Defense and the Interior, and the Office of Technology Assessment. Representatives of national materials professional societies and industry were also heard during these sessions.

On July 29, 1982 the Subcommittee on Transportation, Aviation and Materials met for the purpose of marking up the bill. The bill, as amended, was passed by voice vote and ordered reported to the full Committee for further action.

On August 11, 1982, the Committee met for the purpose of marking up the bill. After further amendment, the bill was ordered reported as amended by a roll call of 37 yeas and 1 nay. House

Report 97-761 (pt. 1) was filed on August 18, 1982. The Committee on Armed Services, to whom the bill was sequentially referred, discharged the legislation on September 22, 1982, after hearings on September 13, 1982 by the Subcommittee on Seapower and Strategic and Critical Materials.

On September 10, 1982 Mr. Cannon, ranking Minority Member of the Senate Commerce, Science and Transportation Committee introduced S. 2898 which would establish a Council similar to that proposed in H.R. 4281.

H.R. 4281 was scheduled for Floor consideration by the House on December 13, 1982, under Suspension of Rules; the measure failed by a yea-and-nay vote of 215 yeas to 164 nays, two-thirds of those present not voting in favor.

2.7—The Uniform Federal Research and Development Utilization Act of 1982. (H.R. 4564)

To establish a uniform Federal system for management, protection, and utilization of the results of federally sponsored scientific and technological research and development; and to further the public interest of the United States domestically and abroad, and for other purposes.

Summary and background of legislation

Since the 95th Congress, the Committee on Science and Technology has been working on bills that would change Federal patent policy so that all Federal contractors can keep the rights to patents they develop under Federal grants and contracts. In the 97th Congress, H.R. 4564, a bill which would make this change, was considered by the Committee.

The bill provides for the allocation of rights to inventions made under Federal contracts in Title III. The essence of Title III is that rights to inventions should remain with the contractor except in exceptional circumstances, in which the Government would have the rights.

In order to prevent a contractor from quashing an invention to which the contractor has the rights, Title III provides that the Government can "march-in" and regain the rights to the invention, but only under certain circumstances.

Title III provides for judicial review of contested administrative decisions by agencies and provides for the recoupment of funds by the Government in cases where government support has provided a contractor with rights to a profitable invention giving the contractor a significant competitive advantage.

Licensing of federally-owned inventions is covered in Title IV. The Commerce Department is designated as the lead agency for licensing, and each agency is given a variety of authorities needed for an effective licensing program. The conditions under which an exclusive or partially exclusive license may be granted are described in this title.

The Federal Coordinating Council for Science, Engineering, and Technology, with the Department of Commerce in a strong supporting role, is given the lead by the bill for monitoring implementation of the bill and Federal patent policy, generally.

The bill preserves the right to keep title to inventions which was given to universities and small businesses by Public Law 96-517 and extends that right to all Federal contractors.

Legislative history

H.R. 4564 was introduced on September 23, 1981 by Mr. Ertel, with several cosponsors. On the same day Senator Schmitt introduced a companion bill, S. 1657, in the Senate.

H.R. 4564 was referred jointly in the House to the Committees on Science and Technology and the Judiciary. A joint hearing on H.R. 4564 and S. 1657 was held on September 30, 1981 by the House Committee on Science and Technology and the Senate Committee on Commerce, Science and Transportation.

On October 29, 1981 the Committee on Science and Technology began markup of H.R. 4564. Markup was completed and the bill was ordered reported on November 17, 1981 by voice vote, a quorum being present. House Report No. 97-379, Part I on the bill was filed on December 10, 1981 by Chairman Fuqua.

A hearing was held on the bill in the Subcommittee on Courts, Civil Liberties, and the Administration of Justice of the House Committee on the Judiciary on March 2, 1982, but no further action was taken on the bill in that committee.

In the Senate S. 1657 was reported on May 5, 1982 by the Senate Committee on Commerce, Science and Transportation (Senate Report No. 97-381), but the bill was never considered by the full Senate.

2.8—SUPPORT FOR THE U.S. FIRE ADMINISTRATION. (H. CON. RES. 288)

Expressing the sense of the Congress that State and local Governments should support the fire safety efforts of the U.S. Fire Administration (USFA) to reduce lives and and property damage lost by fire.

Summary and background of legislation

The Administration's fiscal year 1983 budget proposals did not include funding for the USFA, although the proposals did request funding for the National Fire Academy. The Administration believed that: "firefighting is clearly a local function, and that the Federal role in this area should be limited". The National Commission on Fire Prevention and Control released a comprehensive report on this Nation's fire problem, "American Burning" (1973) which in part supports the Administration's opinions on fire prevention and control. However, this historic report found that although the primary responsibility for fire protection was a local function, the Federal Government had a significant role to play in meeting this national problem. The Commission found that the Federal Government's role should include: Lending technical and educational assistance to State and local Governments; Collecting and analyzing fire information; Regulating the flammability of materials; Conducting research and development; Providing financial assistance when adequate fire protection lies beyond a community's means.

The Commission found that to the extent that these functions were being performed at all, they were scattered among several Federal agencies. Consequently, the Commission recommended the establishment of the USFA, an entity in the Federal Government where the Nation's fire problem would be viewed in its entirely.

As a result of this report, Congress passed the Federal Fire Prevention and Control Act of 1974 (Public Law 93-498), which established the National Fire Prevention and Control Administration as an agency of the U.S. Department of Commerce. The new Administration's mission was the coordination of Federal, State, and local resources to reduce the Nation's fire losses.

The resolution as reported stresses that Congress should continue to support the goals and programs of the USFA, as recommended in the report "America Burning". The Committee was concerned that the deletion of funding for the USFA was not justifiable unless it could be assured of detailed plans for continuing or arranging orderly transfer of programs such as residential fire safety, public education, National Fire Data Center, emergency first response, firefighter health and safety, Operation Dixieland, rural fire prevention demonstration, arson prevention, and emergency medical services. The Committee felt that Congress must be assured that the legislative mandates of the Federal Fire Prevention and Control Act would not be neglected.

In approving this resolution, the Committee recognized the importance of the ongoing programs conducted at the USFA to public safety and the Nation's ability to respond to fires and all types of hazards. The Committee also recognized that the increasingly limited resources available for fire protection at all levels of government justified the need to support and continue the proven Federal-local partnership of the USFA.

Legislative history

On February 26, 1981, Mrs. Cardiss Collins (Democrat of Illinois) introduced House Concurrent Resolution 81. On March 10, 1982, the Subcommittee on Science, Research and Technology considered H. Con. Res. 81 and adopted the resolution with an amendment. By unanimous voice vote. the Subcommittee ordered a clean resolution to be introduced for consideration by the full Committee. The clean concurrent resolution, H. Con. Res. 288, was introduced on March 15, 1982, by Mrs. Collins, for herself, Mr. Walgren and Mrs. Heckler. Subsequently, on March 23, 1982, the Committee on Science and Technology ordered favorably reported H. Con. Res. 288 with an amendment. On April 26, 1982, the report was filed in the House (H. Rept. 97-484). On May 25, 1982, the Subcommittee on Science, Research and Technology held a hearing on the proposed dismantling of the U.S. Fire Administration. The hearing provided a forum between fire service leaders, state and local officials and Congress to discuss the effects that the proposed dismantling of the U.S. Fire Administration could have on the nation's efforts to prevent and control fires.

On June 2, 1982, H. Con. Res. 288 passed the House under Suspension of the Rules. The Concurrent Resolution was referred to the Senate Committee on Commerce, Science and Transportation on June 8, 1982. No further action was taken.

2.9—THE NATIONAL SCIENCE FOUNDATION AUTHORIZATION ACT FOR FISCAL YEARS 1982 AND 1983. (H.R. 5842)

To authorize appropriations for activities of the National Science Foundation for fiscal years 1982 and 1983, and for other purposes.

Summary and background of legislation

The National Science Foundation requested a total of $1,069.5 million for FY 1983, representing a significant increase of $73.3 million over the final appropriated level for FY 1982. However, in comparison with the original appropriated funding level for FY 1981 of $1,096.1 million the FY 1982 and requested FY 1983 funding levels represented, respectively, a $99.9 million and a $26.6 million decrease over that two year period. The most significant reductions occurred in science and engineering education (from $80.7 million in FY 1981 to $15.0 million requested in FY 1983) and the behavioral, social and information sciences (from $53.5 million in FY 1980 to $34.8 million requested in FY 1983). Other affected areas included the women and minorities in science, handicapped, international cooperation, intergovernmental, and innovation programs of the Foundation.

The Committee felt strongly that the Foundation must absorb its share of budget reductions in order to allow for a balanced federal budget. However, it seemed to the Committee that certain programs, such as the behavioral and social sciences and the women and minorities in science programs, had suffered inordinately high reductions while other programs had seen substantial increases. Further, to support only a minimum program of graduate fellowships as the only science and engineering education activity ignored a growing crisis in engineering and science education and manpower.

Because of these and other concerns the Committee recommended a number of changes in the Administration's proposed budget for FY 1983. The Science and Engineering Education activity was increased by $30.0 million to provide funding for programs in precollege, undergraduate and post-graduate education programs. Within the Research and Related Activities category of appropriations, the behavioral, social and information sciences were increased by $18.2 million; the women and minorities programs were increased by $3.0 million; the Scientific, Technological and International Affairs Directorate was increased by $3.1 million; and $2 million was earmarked in Engineering for the Handicapped. In order to keep the research and related activities total to the original requested amount, the MPS, AAEO and Engineering Directorates were reduced by $20.4 million. This represented a 3.1% decrease from the requested amount while still allowing for a 5.0% increase from FY 1982. The Committee also inserted language into the authorization bill establishing the Science and Engineering Education Directorate as a permanent entity of the Foundation rather than as an office with the Director's Executive Office.

In order to avoid setting an unnecessary precedent of having appropriations with no concurrent authorization, $1,085.0 million for fiscal year 1982 was included in the Committee's recommendations.

Legislative history

H.R. 5748 was introduced on March 8, 1952 by Chairman Fuqua, by request, reflecting the Administration's proposed budget for NSF for FY 1983 and 1984, and referred to the Committee on Science and Technology. It was referred to the Subcommittee on Science, Research and Technology. Subcommittee hearings were held on the authorizations for FY 1983 on February 17, 18 and 23; and March 4, 1982. Subcommittee markup was held on March 10, 1982 and a clean bill was ordered to be introduced. H.R. 5842 was introduced on March 17, 1982 and marked up in full Committee on March 18, 23, and April 1, 1982. The bill was reported with amendments on April 26, 1982 (H. Rept. 97-485). A rule was granted on May 11, 1982. H.R. 5842 was considered by the House on May 19, 1982. After agreeing to the amendments which reduced the science and engineering education activity by $10 million to a total of $35.0 million, the bill was passed by a vote of 282-111. H.R. 5842 was placed on the Senate Calendar on May 21, 1982.

2.10—THE AUTOMOBILE RESEARCH COMPETITION ACT. (H.R. 5880)

To provide for an automobile research competition to produce a radically new automobile embodying high fuel economy, safety, and environmental standards.

Summary and background of legislation

The goal of H.R. 5880 is to spur the development of the next generation of super-high mileage cars and to make sure that an American manufacturer is the builder. The bill would establish a national automobile research competition open to all American firms to design and mass test market a super-high mileage vehicle. The competition calls for each competitor to submit six prototype vehicles to the Department of Transportation for testing. Competitors' vehicles must meet the following standards: 100 mpg with a diesel engine, and 80 mpg with a gasoline engine; carry four passengers and normal luggage load; meet existing safety and environmental standards; have a service life of 100,000 miles; and, cost $6,000 to $6,500 in 1982 dollars. The winner, as determined by the Secretary of Transportation, would receive a prize of up to $140 million depending on sale price of the first 10,000 vehicles. Up to four runners-up would receive consolation prizes of $20 million.

Legislative history

H.R. 5880 was introduced by Mr. Shamansky and 20 cosponsors on March 17, 1982, referred to the Committee on Science and Technology and subsequently referred to the Subcommittee on Transportation, Aviation and Materials. On June 15, the Subcommittee on Transportation, Aviation and Materials held a hearing to consider the merits of the bill and to gather the views and judgments of experts. On September 29, 1982, the Subcommittee on Transportation, Aviation and Materials forwarded the bill, amended, to the Full Committee.

2.11—THE RISK ANALYSIS RESEARCH AND DEMONSTRATION ACT OF 1982. (H.R. 6159; S. 3006)

To establish a program under the coordination of the Office of Science and Technology Policy for improving the use of risk analysis by those Federal agencies concerned with regulatory decisions related to the protection of human life, health, and the environment.

Summary and background of legislation

The use of most technologies by the public frequently involves an associated risk to health and safety. The comparison of the risks involved in the use of alternative technologies is known as risk analysis and risk analysis is finding growing use in the regulatory processes. However, this technique is far from fully developed, and its wider implications are not well understood. As a result, Congressman Don Ritter introduced several bills in the 96th Congress to broaden the use of risk analysis. In the 97th Congress a revised version of the Ritter bills, with emphasis on a 30 months program of research and demonstration was introduced.

The Subcommittee on Science, Research, and Technology had conducted a number of studies in the field of risk analysis beginning in 1979. That year a joint hearing with the Senate Subcommittee on Science, Technology, and Space was conducted on "Risk/Benefit Analysis in the Legislative Process".

The bill introduced by Mr. Ritter (H.R. 3441) defined the concept of risk analysis, mandated a program of risk research and demonstration to be conducted through case studies to be performed by the Federal Regulatory agencies, and to be coordinated by the office of Science and Technology Policy and the Office of Information and Regulatory Policy in OMB. A report and analysis of the case studies would be submitted at the end of the 30-month period.

Legislative history

H.R. 3441 was introduced in the House on May 5, 1981 and referred to the Committee on Science and Technology. It was then referred to the subcommittee of jurisdiction, the Subcommittee on Science, Research and Technology.

Because of the Subcommittee's extensive prior involvement with studies and comparable legislative proposals, hearings on H.R. 3441 were limited to one day, September 24, 1981.

The Subcommittee on Science, Research, and Technology conducted a markup of the bill on March 17, 1982, where the major modification was the acceptance of an amendment eliminating the funding provisions of the bill. The clean bill reported to the Full Committee was H.R. 6159. The Full Committee reported the bill with a favorable recommendation on June 24, 1982 (House Report 97-625). Consideration by the House took place on August 2, 1982. After debate, the bill was passed under a suspension of the rules. August 3, 1982, the bill was referred to the Senate Committee on Commerce, Science and Transportation.

2.12—Environmental Research, Development, and Demonstration Authorization Act of 1983. (H.R. 6323; S. 2577)

Authorizing appropriations to the Office of Research and Development, Environmental Protection Agency, for fiscal years 1983 and 1984.

Summary and background of legislation

The Committee on Science and Technology has adopted the practice of annual authorization of the Environmental Protection Agency research program as a way of ensuring that the program i well managed and is supporting the Agency's primary role of protecting public health and welfare.

H.R. 3115, the "Environmental Research, Development, and Demonstration Act of 1982", continued the process of authorizing program funds and providing program direction. Unlike prior bills, this year's bill, H.R. 6323, authorized program funds and provided program direction for two fiscal years. This expansion was intended to promote stability and continuity in the Agency's research program which, given the nature of research, should enhance program quality.

As reported, H.R. 6323, authorized appropriations totaling $296,785,000 for FY 1983 and $310,887,000 for FY 1984 for the research programs of the Environmental Protection Agency. The FY 1983 authorization was $80,900,000 above the President's FY 1983 request of $215,885,000 and $18,864,000 above the FY 1982 appropriation of $277,921,000 for these programs. (The corresponding FY 1982 authorization (H.R. 3115) was $306,296,000.) Of this increase, $17,000,000 was for salaries and expenses, $59,500,000 was for research contracts, grants, and cooperative agreements, and $4,400,000 was for Superfund research. The FY 1984 authorization represented a 5% increase over the FY 1983 authorization.

In addition to program authorizations, H.R. 6323 contained provisions on long-term environmental research, environmental monitoring, energy research, the EPA Science Advisory Board, management and organization of Federal environmental research programs, and indoor air quality.

Legislative history

The Subcommittee on Natural Resources, Agriculture Research and Environment held hearings on the FY 1983 EPA budget request for research and development on February 24 and March 2 and 19, 1982. In response to these hearings, a draft bill was prepared and presented to the Subcommittee for markup on May 5, 1982. In that meeting, the Subcommittee order reported, by a 7 to 3 recorded vote, a clean bill to the full committee. The bill, H.R. 6323, was introduced on May 6, 1982, by Mr. Scheuer with five cosponsors (Mr. Blanchard, Mr. Brown of California, Mrs. Schneider, Mr. Walgren, and Mr. White). H.R. 6323 was considered, amended, and ordered reported by the full Committee on Science and Technology on May 18, 1982, a quorum being present. The adopted amendment was offered by Mrs. Schneider and provided for the establishment of a research program on indoor air quality, similar to the bill H.R. 6289. The report accompanying H.R. 6323 (H. Rept. 97-574) was filed in the House on May 18, 1982.

On August 17, 1982, the House amended and passed H.R. 6323 by a recorded vote of 314 to 92. The adopted amendment reduced the authorization from $296.8 million for FY 1983 and $310.9 million for FY 1984 to $277.9 million and $294.6 million respectively. Passage was vacated and S. 2577 was passed in lieu after being amended to contain the language of H.R. 6323 as passed.

The Senate considered and further amended the bill on October 1, 1982. The House authorization levels for each research category in the House bill were retained with the exception of the Superfund research program which was substituted with a provision allowing expenditure of funds out of the hazardous waste trust fund for research purposes. Additionally, the Senate amendment eliminated restrictive language dealing with the transfer of funds between authorized research programs and with reduction-in-force actions. House language calling for a management and organizational study of Federal environmental research programs was also eliminated.

The House agreed to the Senate amendment on October 1, 1982 and on October 12, 1982 the bill (S. 2577) was sent to the White House for presidential action. The bill was vetoed on October 22, 1982. No further action on the legislation was taken by the 97th Congress.

2.13—The National Oceanic and Atmospheric Administration Authorization Act, Fiscal Year 1983. (H.R. 6324)

To authorize appropriations for atmospheric, climatic and ocean pollution activities of the National Oceanic and Atmospheric Administration for the fiscal years 1983 and 1984, and for other purposes.

Summary and background of legislation

The purposes of the bill are: to ensure that the National Oceanic and Atmospheric Administration (NOAA), the lead agency for civil oceanic and atmospheric activities and programs, operates under a clear statutory charter; to simplify, streamline, and consolidate the authorization of appropriations for NOAA, within the Department of Commerce, such that NOAA's programs can be viewed in a coherent fashion, and such that the authorization process, previously fragmented and unduly time-consuming, will be significantly reduced; to reauthorize the National Climate Program Act; to reauthorize the National Ocean Pollution Planning Act; to reauthorize Title II of the Marine Protection, Research, and Sanctuaries Act, and to reauthorize the Weather Modification Reporting Act.

The bill had several major provisions.

1. It authorized $542,779,000 for NOAA's atmospheric, climatic, and ocean pollution activities for fiscal year 1983 and $575,346,000 for fiscal year 1984. The fiscal year 1983 authorization is $44,093,000 more than the President's request of $498,686,000.
2. It contained substantial amendments to both the National Climate Program Act and Title II of the Marine Protection, Research and Sanctuaries Act.

3. It added a title on "Great Lakes Protection" to the National Ocean Pollution Planning Act.

The National Oceanic and Atmospheric Administration was created by Reorganization Plan No. 4 as part of the Presidential reorganization in 1970. Since its establishment NOAA has obtained most of its funding for its major programs through direct appropriations with little or no authorization or congressional oversight. Authorization actions that did occur were limited to a few specific areas of interest such as ocean pollution and ocean waste disposal. Because of this lack of a comprehensive view of NOAA and its programs, the Committee decided in 1980 to authorize those programs and activities that fall directly in the Committee's jurisdiction, namely the atmospheric, climatic, and ocean pollution activities. These program elements comprise well over one-half of NOAA's total program. In 1981, H.R. 2803, which authorized appropriations for NOAA for fiscal year 1982, passed the House as reported by the Committee on Science and technology. However, the Senate took no action on the bill. It was the Committee's intention with H.R. 6324 to work again toward a full NOAA authorization in collaboration with the appropriate Committees of the House and Senate.

Legislative history

The Subcommittee on Natural Resources, Agricultural Research and Environment held three days of hearings on atmospheric, climatic and ocean pollution activities of the National Oceanic and Atmospheric Administration February 23, February 25, and March 3, 1983.

The February 23 hearing focused on the impacts of proposed cuts in weather services, including delaying procurement of new weather radar systems, elimination of one of the nation's two polar-orbiting weather satellites, and reducing a variety of weather services tailored to agriculture, aviation, and forestry.

The February 25 hearing centered on the impact of proposed FY 1983 budget cuts on efforts to understand the effects of pollution on ocean resources.

At the March 3 hearing, testimony was received from Members of Congress and from Dr. John Byrne, Administrator, National Oceanic and Atmospheric Administration, on the FY 1983 budget.

In response to these hearings, a Committee print of a bill authorizing appropriations for NOAA was ordered reported by the Subcommittee on May 5, 1982 by a recorded vote of 7-3; on May 6, 1982, Mr. Scheuer (with Mr. Blanchard, Mr. Brown of California, Mrs. Schneider, Mr. Walgren and Mr. White) introduced the Committee print (as amended) as H.R. 6324. The full Committee on Science and Technology ordered the amended bill reported on May 18, 1982 by voice vote. On May 18, 1982, the report was filed in the House (H. Rept. 97-557, part 2).

H.R. 6324, with one amendment, passed the House on August 17, 1982, by a vote of 340-65. S. 2605, the Senate companion bill to H.R. 6324, was reported by the Senate Committee on Commerce, Science and Transportation, but never was considered on the Senate floor. December 16, 1982, H.R. 6324 was passed by the Senate, amended. December 20, 1982, objection was heard to the request for consideration of the Senate amendment.

Complete transcripts of these hearings are printed in Science and Technology Committee Report No. 84.

2.14—THE HUMANE CARE AND DEVELOPMENT OF SUBSTITUTES FOR ANIMALS IN RESEARCH ACT. (H.R. 6928)

To promote the development of nonanimal methods of research, experimentation, and testing, and to assure humane care of animals used in scientific research, experimentation, and testing.

Summary and background of legislation

Since the enactment of the Animal Welfare Act in 1966, and subsequent amendments (7 U.S.C. 2131-2156), no law dealing specifically with laboratory animals has been passed by the Congress. However, for the past several Congresses, resolutions and bills have been introduced to promote development of methods of research and testing that would not use animals or that would use fewer animals and seek to reduce the pain and suffering to animals. In addition, a bill to amend the Animal Welfare Act to insure humane treatment of laboratory animals was introduced into the 96th Congress.

No action had been taken on any of the bills. However, interest in the subject built steadily, and the Committee's Subcommittee on Science, Research and Technology, to whom the bills were referred, began a serious study of the issue. With the reintroduction of such bills in the 97th Congress, the Subcommittee planned hearings, held October 13 and 14, 1981 with the stated purpose to examine: (1) Excessive, unnecessary, uneconomic or inappropriate use of animals in current practice; (2) ways to promote more humane and appropriate use of animals, including alternatives to animal use where possible; (3) incentives for development of more and improved alternatives to animal use, including those suggested in pending legislative proposals; (4) responses from academic, private and public research institutions to problems raised by those proposals, and (5) areas in which animal-based research or testing remains crucial to protection or enhancement of human health. Testimony was taken from Members of Congress, government witnesses, the National Research Council, private industry, animal welfare spokesmen and the research community.

Several months were then spent drafting a Subcommittee bill to address the issues brought out in the hearings. The result was H.R. 6245 (predecessor of H.R. 6928), which had 3 main thrusts:

1. It placed special emphasis on the development of methods of research and testing that do not require live animals, that reduce the number of animals used, and produce less pain and distress in animals used.

2. It sought to assure uniform, humane treatment, care and use of laboratory animals by requiring a rigorous standard for accreditation of research entities which are federally funded, and mandates an animal care committee within each research entity, which committee shall include a veterinarian and a member not affiliated with the research entity.

3. It required scientific peer reviewers to make sure that research proposals include appropriate provision for minimizing pain

and distress in animals used. Reviewers also must evaluate proposals in terms of the importance of expected benefits from the research as it relates to any animal distress involved in the experimentation.

Legislative history

On April 29, 1982, the "Humane Care and Development of Substitutes for Animals in Research Act" (H.R. 6245) was introduced and referred to the Committee on Science and Technology. It was sponsored by the Subcommittee on Science, Research and Technology chairman, Mr. Walgren, and 7 other members of the Committee on Science and Technology.

The Subcommittee on Science, Research and Technology held a hearing on May 4, 1982, at which government witnesses testified on the new bill. At a meeting of the Subcommittee on June 9, H.R. 6245 was amended, approved by a 14-1 vote, and reported to the full Committee.

The full Committee met and considered the Subcommittee approved version of H.R. 6245 on August 3, 1982, and a bill reflecting Committee actions was ordered to be prepared and introduced. This clean bill, H.R. 6928, was introduced on August 4, 1982, and ordered reported from the full Committee by a voice vote, on August 11, 1982. House Report 97-777, Part I, was filed in the House on August 19, 1982. The House Committee on Energy and Commerce, to which this legislation was jointly referred, held hearings in its Subcommittee on Health and the Environment in December 9, 1982, but no further action was taken.

2.15—THE NATIONAL ENGINEERING AND MANPOWER ACT OF 1982. (H.R. 7130)

To provide a national policy for engineering, technical, and scientific manpower, to provide for cost sharing by the private sector in training such manpower, to create a National Coordinating Council on Engineering and Scientific Manpower, and for other purposes.

Summary and background of legislation

During the past several years the Committee on Science and Technology has been made increasingly aware of problems in the nation's ability to provide trained and technically skilled personnel necessary to our continued national economic strength and vitality. Specific areas of concern include: a decrease in engineering faculty with a concurrent increase in engineering enrollment; a decline in the quantity and quality of new graduate engineers and researchers, a decline in the number of science and mathematics teachers at the precollege level; a long-term decline in precollege scientific literacy and an increased need for skilled technicians in various high technology fields. These problems have been identified in various hearings before the Committee, in national studies and conferences, and in individual communications to the Committee. the lack of (1) a comprehensive national policy regarding technical, engineering and science manpower, or (2) a formal means for formulating such a policy and assessing related technical manpower needs, or (3) specific programs designed to implement manpower policies has been widely cited as a significant cause of these problems.

The principal purpose of H.R. 7130 was to establish a broad national policy for engineering, technical, and scientific manpower and to define the role of the Federal Government in solving the national manpower problems just described. The bill would establish a means, the national Coordinating Council on Engineering and Scientific Manpower, for formulating more specific policies, and would establish funded programs designed to solve manpower problems. Another purpose of the bill was to provide for cost-sharing, particularly by the private sector, in the programs established under the legislation.

In summary, H.R. 7130 provided a comprehensive statement of national policy regarding the Federal role for engineering, technical, and scientific manpower. The bill would establish within the Executive Branch a Coordinating Council on Engineering and Scientific Manpower for formal Federal and non-Federal joint participation in making policy and program recommendations related to these manpower needs. In addition, the bill promoted cost-sharing in the development of technical manpower by providing for the creation of a special discretionary Engineering and Science Manpower Fund within the National Science Foundation. The bill further provided for specific programs to be established within the National Science Foundation. These included programs for: modernization of instructional instrumentation; technician training at two-year and community colleges; young faculty research awards; and precollege math and science teacher improvement. The following amounts would be authorized for the various provisions in the bill: $51 million in fiscal year 1983; $100 million in fiscal year 1984 and fiscal year 1985; and $125 million in fiscal year 1986 and fiscal year 1987. The Fund and Council would both terminate after five years.

Legislative history

H.R. 7130 was originally introduced as H.R. 5254 by Mr. Fuqua, Mr. Walgren and eighteen other co-sponsors on December 16, 1981 and referred to the Committee on Science and Technology. Hearings were held on the issues of engineering and science manpower on February 11; April 27, 29; and May 7, 1982. H.R. 5254 was marked up on September 16, 1982 by the Subcommittee on Science, Research and Technology, amended and reported as a clean bill for consideration by the full Committee. H.R. 7130 was subsequently introduced by Mr. Fuqua, Mr. Walgren and Mrs. Heckler on September 16, 1982, superseding H.R. 5254. The full Committee met for the purposes of marking up H.R. 7130 on September 22, 1982 and reported the bill without amendments. (H. Rept. 97-933, part 1.) After the Committee filed its report the bill was subsequently referred on October 5, 1982, to the Committee on Education and Labor, December 3, 1982, for its consideration. The Committee on Education and Labor reported H.R. 7130 on December 3, 1982 (H. Rept. 97-933, part 2).

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CHAPTER III—OVERSIGHT, INVESTIGATIONS AND ACTIVITIES OF THE COMMITTEE ON SCIENCE AND TECHNOLOGY, INCUDING SELECTED SUBCOMMITTEE LEGISLATIVE ACTIVITIES

3.1—THE COMMITTEE ON SCIENCE AND TECHNOLOGY

3.1(a)—U.S. SCIENCE AND TECHNOLOGY UNDER BUDGET STRESS

By the completion of the first session of the 97th Congress the Committee had become increasingly concerned that the Administration's federal budget policies would impose two kinds of stress on the long-term health of U.S. science and technology. The first was due to the rapid, rather than gradual, reduction of federal support for many research and development activities, with all of the related problems of priority setting, definition of minimum viable programs, disruption of institutions and planning, and dislocation of scientific and engineering manpower. The second type of stress was due to the continuing uncertainty about the future federal role in R&D. It was felt that prolonged uncertainty would have a very negative impact on the Nation's R&D institutions which would be even more serious than the budget reductions themselves.

A series of Committee hearings was held to elicit the views of representatives from the R&D community; from academia, from industry and from government, on the significance of the Administration's budget policies for U.S. science and technology. The hearings followed closely a conference on the same subject held by the National Academy of Sciences. Further, the hearings were to provide an overview prior to consideration of the Administration's fiscal year 1983 R&D budget proposal.

The first hearing in the series was held on December 10, 1981 and has as witnesses the present and the two preceding Presidential Science Advisors. Dr. George Keyworth, Director of the Office of Science and Technology Policy and Science Advisor to President Reagan, discussed the current Administration's R&D policies, which he stated were tied to its economic and national security policies. While advocating continued federal support for basic research, he suggested that the U.S. could no longer expect to be or afford to be world preeminent in all fields of science. He emphasized that constantly growing budgets, across-the-board, could not continue; that one must now discriminate between scientific areas that are most promising and those that are less promising through the criteria of excellence and pertinence. He stated that, compared to basic research, "there is less justification for a Federal Government role in applied research and development, except in areas of dominant Federal responsibility such as defense, space, or particular aspects of the regulated nuclear industry. There are also areas of shared responsibility such as health, education, and agriculture, where the broad social benefits justify some Federal involvement."

Dr. Frank Press, President of the National Academy of Sciences (NAS) and former Science Advisor to President Carter, summarized the results of the NAS Conference on the Federal R&D Budget for 982 and Future Years with the following general proposals to the Administration and Congress:

—Make budgetary adjustments that maintain support of the basic sciences by reallocating funds between research and development, and between agencies.

—instruct the agencies to maintain the strength of science in agency budget allocation;

—direct that a larger part of increases in the national security budget be applied to the funding of basic research that is essential to the maintenance of that security;

—in recognition of the importance of the Nation's scientific and engineering manpower pool, continue graduate student support through research grants, fellowships and traineeships;

—recognize the need to revitalize the instrumentation and facility base on which future scientific and technological advance depends.

Dr. Press added that under the present budget circumstances it might be necessary to reexamine the "pluralistic cornerstone" of Federal Science policy; that is, that one might have to make new trade-offs between egalitarianism and elitism in the allocation of Federal resources for R&D.

Dr. H. Guyford Stever of the National Research Council and former Science Advisor to President Ford, stated that a weakness of U.S. R&D budgeting in the past has been that expenditures rise and fall with short-term economic and political cycles. By contrast, our international competitors have relative stable, multi-year plans for R&D. He also discussed the declining scientific and engineering manpower base in this country compared to the USSR, West Germany and Japan. Finally, he pointed out that R&D institutions need time to adjust to changing Federal policies, and that while he agreed that an increasing percentage of R&D support should come from private sources, the trend should be slow and steady. Thus, he stresed the need for long-term U.S. R&D planning.

Members of the Committee questioned the science advisors on a variety of timely issues, including science education, the federal role in technology development, tax incentives for R&D, across-the-board versus targeted R&D budget cuts, and the role of small business in R&D.

The next three hearings in the series were held on February 2, 3, and 4, 1982. The interval between the first hearing and the last three allowed later witnesses to review and comment on the prior testimony of Dr. Keyworth and the other science advisors.

During the February hearings, the Committee received testimony from five university presidents who described how the R&D budget cuts were affecting their campuses and laboratories. They stressed the importance of stability and continuity of federal support to help train the next generation of scientists and engineers and to help maintain scientific equipment and instrumentation at universities.

The Committee also received testimony from Dr. D. Allan Bromley, Chairman of the Board, American Association for the Advancement of Science, from the President of the American Chemical Society, from Nobel Laureate, Dr. James Watson, and from a representative of the American Institute of Biological Sciences. These gentleman reiterated the need for a federal role in basic research because the private sector will not necessarily allocate optimal resources in all the areas that are of importance to the Nation. They also discussed the urgent need to improve elementary and secondary science and mathematics education and to maintain support for undergraduate and post-graduate students.

Testimony was also received from representatives from selected industries, namely the Gas Research Institute (GRI) and the Computer and Business Equipment Manufacturers Association. Mr. David Webb of GRI stated that the Administration's policy of funding primarily long-term, high-risk energy R&D should be applied consistently to all energy sectors. He also pointed out that the unique disincentives for the regulated industries to fund R&D should be recognized in any funding transition period.

Following this series of hearings Congress received the Administration's FY 1983 budget request. The Committee then began its consideration of the various agency authorizations in light of what it had learned from these and subsequent subcommittee hearings.

Committee publication Number 97-118.

3.1(b)—FAREWELL HEARING IN CONNECTION WITH THE RETIREMENT OF ELMER STAATS

Background

The Comptroller General of the United States serves as the head of the General Accounting Office. His term of office is 15 years. In 1981 the incumbent, the Honorable Elmer Staats concluded his period of service. Before becoming Comptroller General, Mr. Staats had served as Assistant Director of the Bureau of the Budget. The predecessor of the Office of Management and Budget, where he had taken a particular interest in matters of the Federal Government's support for science and technology. He continued that interest during his term as head of the GAO, and appeared on numerous occasions before the Committee on Science and Technology to testify on a variety of issues.

Summary of hearing

With the impending departure of Mr. Staats from the GAO, the Committee asked him to testify in a farewell appearance on March 2, 1981. The hearing was preceded by a small informal reception at which present and former Members of the Committee and Mr. Staats were present. In his testimony and in the course of the question period Mr. Staats summed up his views on Federal science policy, touching on questions of the establishment of the National Science Foundation and its role over the years in support of research. The contributions of the Office of Science and Technology established by President Eisenhower, the value of reports such as the science indicators report, the transition from the National Advisory Committee for Aeronautics to NASA, and a number of other developments and the associated policy questions.

3.1(c)—VIEWS OF SCIENCE POLICY OF THE AMERICAN NOBEL LAUREATES

Background

For several years the Committee on Science and Technology has held a one-day hearing with the Nobel Laureates in science. The purpose of this hearing has been to obtain the view of those few outstanding scientists who have been recognized by their peers as having made truly outstanding contributions to science, who are active researchers, and who can give the Committee the benefit of their views with respect to current government policies for the support of scientific research and the education of scientists.

Summary of hearing

In November 1981 seven Americans were awarded the Nobel prize in science, some of these individuals sharing the awards in the individual disciplines. Five of these distinguished individuals appeared before the Committee on February 25th, one was unable to be present but submitted a written statement, and one, Dr. James Tobin, a Professor of Economics at Yale University, was unable to be present. The physics laureates were Dr. Arthur L. Schawlow of Stanford University and Dr. Nicolaas Bloembergen of Harvard University; the Nobel Laureate in Chemistry was Dr. Roald Hoffman of Cornell University; and the Nobel Laureates in Medicine were Dr. David H. Hubel of the Harvard Medical School and Dr. Torsten Wiesel also of the Harvard Medical School. Dr. Roger W. Sperry of the California Institute of Technology submitted a written statement. The witnesses discussed with the Committee a number of subjects in the field of Federal science policy, including the communication of scientific results, the value of using only the criterion of excellence in selecting investigators for Federal research grants, the need to continue to provide support for graduate education and post-doctoral research in science, the question of computer research and development in the context of advances being made in Japan, and the general role of the Federal government in advancing American Science so that in the future U.S. scientists can continue to receive the recognition which the Nobel prizes bestow.

Committee publication number 97-94.

3.1(d)—OVERSIGHT REPORTS OF THE FULL COMMITTEE, 97th Congress

WEST VALLEY COOPERATIVE AGREEMENT (H. REPT. 97-273)

Background

The Western New York Fuel Service Center, located at West Valley, New York, 30 miles south of Buffalo, was the only commercial nuclear fuel reprocessing plant to ever operate in the United States. It began operations in 1966, and suspended operation in 1972, in anticipation of scaling up the size and capacity of the plant. Due to changes in the regulatory climate and financial considerations the plant was never reopened. The cessation of operations left some 580,000 gallons of high level liquid nuclear waste in temporary storage in two separate tanks on the site, which constitute an enormous potential adverse public health consideration.

Congressional attention first focused on the West Valley problem in 1976, when a Committee on Science and Technology subcommittee held hearings on the problem. After four years of negotiation and consideration, the Congress passed the West Valley Demonstration Act on September 15, 1980. The Act provided for a demonstration project that would solidify and dispose of the high level waste on the site. The Act was signed by President Carter on October 1, 1980, becoming Public Law 96-368.

The Act provided that this demonstration project would be executed by the Department of Energy in conjunction with the State of New York. The Act directed the Secretary of Energy to enter into a cooperative agreement with the State of New York as a mechanism to execute the demonstration project; and specified that a major component of the agreement determine how the State would pay its share of the cost.

Negotiations for a cooperative agreement between the Department of Energy had, in fact, been ongoing since at least March of 1979, in anticipation of the passage of enabling legislation. When the West Valley Act was passed, intensive negotiations immediately commenced between the DOE and the New York State Energy Research and Development Authority (NYSERDA). An agreement was signed on November 3, 1980 by C. Worthington Bateman, Acting Under Secretary of Energy, and James Larocca, Chairman of NYSERDA.

It is the cooperative agreement that became the focus of concern on the part of three congressional committees, and which ultimately led to the inquiry by the Subcommittee on Investigations and Oversight into the cooperative agreement and the West Valley Project.

The earliest concern was on the part of the House Appropriations Committee's Subcommittee on Energy and Water, chaired by the Honorable Tom Bevill (D-Ala.). In a May 13, 1981 letter to Secretary of Energy Edwards, the Subcommittee stated its concerns with the agreement, specifically citing that "the cooperative agreement was inconsistent with P.L. 96-368 with respect to several matters and is ambiguous and unclear in others", that "The agreement appears to impose responsibilities on DOE with attendant funding mortgages beyond those necessary . . ." and that "The agreement seems to limit State funding responsibilities below those provided in Public Law 96-368." [1] A letter was sent to Secretary Edwards on May 26, 1981 by the House Interior Committee's Subcommittee on Energy and Water, expressing largely the same concerns.[2]

A more specific mandate came on May 14, 1981 at a hearing of the Committee on Science and Technology during its consideration of H.R. 3146, the Department of Energy Research and Development Authorization for fiscal year 1982. The question of whether the West Valley Demonstration Project's cooperative agreement was consistent with the enabling legislation was raised, and at the direction of the Full Committee Chairman, the Subcommittee on Investigations and Oversight undertook an investigation of the contract.[3]

As a result of this Committee request, the Subcommittee undertook an investigation of the cooperative agreement, which culminated in a hearing on July 9, 1981. The Subcommittee examined two areas pertaining to the agreement:

1. The circumstances surrounding the negotiation and conclusion of the contract; and
2. The portions of the agreement which were alleged to be inconsistent with P.L. 96-368 and the congressional intent behind the Act, and the other portions of the agreement which were overly ambiguous.

During the course of this investigation, the Subcommittee reviewed the Act, and the cooperative agreement; requested and reviewed all Departments of Energy records pertaining to the West Valley agreement; interviewed all present and former Departmental officials associated with the project; interviewed officials from NYSERDA, and requested pertinent documents from the Authority; received legal analysis of the cooperative agreement from the General Accounting Office and the Congressional Research Service; interviewed personnel and reviewed records of the Nuclear Fuel Services, the present commercial operator of the site; visited the West Valley site; and consulted with various Congressional sources familiar with the agreement.

On October 6, 1981, the Committee on Science and Technology approved and adopted a report entitled "West Valley Cooperative Agreement." The Chairman was directed to transmit a copy to the Speaker of the House.

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[1] Letter dated May 13, 1981 to Honorable James B. Edwards, Secretary, Department of Energy, from Honorable John T. Myers, Ranking Minority Member, and Honorable Tom Bevill, Chairman, Subcommittee on Energy and Water Development, Committee on Appropriations, U.S. House of Representatives.

[2] Letter dated May 26, 1981 to Honorable James B. Edwards, Secretary, Department of Energy, from Honorable Morris K. Udall, Chairman, and Honorable Manual Lujan, Jr., Ranking Minority Member, Committee on Interior and Insular Affairs, U.S. House of Representatives.

[3] May 14, 1981, Hearing held before the Committee on Science and Technology, U.S. House of Representatives, Markup on H.R. 3146 and H.R. 3447, pp. 69-71 and pp. 117-119.

OVERSIGHT REPORT—RESEARCH PROGRAMS CONDUCTED BY THE NUCLEAR REGULATORY COMMISSION (H. REPT. 97-795)

Background

The Subcommittee on Energy Research and Production was asked by the Chairman to conduct oversight hearings on the Nuclear Regulatory Commission's research programs. Hearings were held on May 18 and 19, and June 15, 1982. Although this is the first time that the Subcommittee has held hearings on NRC's entire research program, it had followed with interest its growth and evolution after the Committee received nuclear R&D jurisdiction in 1977.

The $220 million that NRC spends on research represents approximately half the total NRC budget. In the current economic climate, the Subcommittee felt it essential that the program be subjected to critical technical review and oversight.

H. Rept. 97-795 describes the oversight findings and recommendations of the Subcommittee on Energy Research and Production.

On August 11, 1982, the Full Committee met and approved the report entitled: "Research Programs Conducted by the Nuclear Regulatory Commission." The report was filed in the House on September 8, 1982 (H. Rept. 97-795).

3.2—THE SUBCOMMITTEE ON ENERGY DEVELOPMENT AND APPLICATIONS

3.2(a)—FOSSIL ENERGY: COAL AND SYNTHETIC FUELS

During the 97th Congress, the Subcommittee reviewed two fossil energy budget requests from the Administration which represented a significant change in policy. Prior to submittal of the Fiscal Year 1982 budget, the emphasis had consisted of supporting the development and demonstration of various processes for direct utilization of coal and the conversion to gaseous and liquid fuels. At the beginning of the 97th Congress, there were pilot plants constructed and operating to provide basic data on the gasification of coal, the direct gasification of coal and subsequent liquefaction, the direct liquefaction of coal, the fluidized-bed combustion of coal at atmospheric and elevated pressures, and the enhanced recovery of oil and natural gas. Concurrently, the Department of Energy was supporting the design of five demonstration plants. Two of these plants would produce liquid fuels by the direct liquefaction of coal, one plant would produce a medium BTU gas for regional industrial consumption, and two plants would investigate different processes for converting coal to a high-BTU gas for pipeline distribution.

However, with the formation of the U.S. Synthetic Fuels Corporation (SFC), which was established by the Energy Security Act (P.L. 96-294), DOE suggested that the demonstration plant projects would be candidates for project construction and operation support from the SFC. The stated intent of the SFC was to provide financial assistance to such projects through loan and price guarantees, joint ventures, or through corporation construction projects. The budget request for Fiscal Year 1982 reflected this redirection of effort, as the funding levels for demonstration plant construction were dropped to zero. That authorization request also anticipated the phaseout of the pilot plant activities during the Fiscal Year 1982. That intent was evident in the Fiscal Year 1983 authorization request which eliminated all pilot plant activity.

The underlying philosophy throughout these changes was that the industrial community should be provided the opportunity to invest in any near-term, low-risk processes. At the same time, high-risk, long-term projects that might provide a high payoff potential could be recipients of federal funding. In that way, as federal funds allowed for improved definition of process, with accompaning risk reduction, industry could become a participant, gradually assuming full responsibility for carrying the process to commercialization.

The Subcommittee therefore conducted oversight hearings on two general subjects: (1) coal research, and (2) synthetic fuels development. These hearings were in addition to the substantial coverage of these topics during the Committee's annual authorization hearings.

3.2(b)—COAL RESEARCH AND DEVELOPMENT NEEDS

The Subcommittee conducted a series of five hearings on the subject of coal research and development needs, in view of the Department of Energy's announced plan to increase emphasis on basic and applied research rather than on development and demonstration. One of the hearings concentrated on the direct combustion of coal in which the technical problems associated with direct combustion were examined. Technologies were discussed that could make the direct combustion of coal both environmentally and economically acceptable. The witnesses emphasized the fact that three-quarters of the coal consumed in this country now goes to generate electricity and that these coal-burning facilities are becoming larger all the time. The point was made that direct combustion will continue to be the major means of coal utilization until the 21st Century.

The conventional combustion of coal has been blamed for a number of problems. For example, ash is a combustion residue which requires disposal. Sulfur, which naturally occurs in coal, produces sulfur dioxide during combustion, a noxious gas which must be removed from the stack. Sludge formed in the sulfur dioxide removal process also requires a means of disposal. Acid rain has been blamed on the direct combustion of coal. Witnesses described the means for minimizing or eliminating these environmental problems. Fluidized bed combustion was cited as a method for removing sulfur from the combustion gas stream. Devices designed to remove particulates and sulfur dioxide, called "hot-stream cleanup devices," were described by both suppliers and users as effective devices. The need was stressed for better pre-combustion cleanup of the fuel, which requires removal of sulfur and ash from the coal. Intensive coal cleaning technology has not been sufficiently developed to allow an economic analysis of the tradeoffs between cleanup prior to or following combustion.

The remainder of the hearings dealt with the overall scope of coal research. A total of 29 witnesses at four hearings reviewed the current status and recent achievements in coal science and technology. The witnesses also described the size and quality of the scientific and engineering community engaged in coal research. There was agreement among the witnesses that at present we lack a good understanding of the physical and chemical properties of coal, and that fundamental coal research would not be carried out solely by industry. Several witnesses described the "need for predictive coal technology," that is, the ability, with proper fundamental knowledge, to predict how any rank or grade of coal would react in any given coal conversion or combustion process.

It was learned that presently there is an adequate cadre of coal researchers in the United States. However, the Committee was warned that under present year-to-year federal funding uncertainties, universities, and industry find it difficult to maintain effective research teams. There was general agreement that a comprehensive coal research program would involve the DOE energy technology centers and national laboratories, colleges and universities, and industry. It was stated further that the lead role in coal research belongs to the Federal Government.

Committee publication number 97-136.

3.2(c)—STATUS OF SYNTHETIC FUELS DEVELOPMENT

A series of three hearings focused on the development of synthetic fuels processes and industries. It had become evident over the last several years that the synthetic fuels activity closely involved three interrelated areas: process development, environmental considerations, and socio-economic issues. It had been found that the latter two areas could be addressed, in part, by process changes.

The first hearing involved the review of the technical and administrative operation of the Synthetic Fuels Corporation and the types of proposals received at that time. Witnesses discussed the technical and contractual status of synthetic fuels projects which were anticipated in the near future: the Union Oil project to provide shale oil from Colorado deposits; the Colony project for shale oil production in the same general area; and the Great Plains gasification project for conversion of lignite in North Dakota to high-BTU pipeline quality gas. These projects and others proposed to the Synthetic Fuels Corporation had been demonstrated earlier only at the process development scale. However, none of these proposed technologies had been completely demonstrated at full-scale conditions operating under current national and local environmental regulations. Thus, it was thought that the Synthetic Fuels Corporation might need to oversee a certain amount of process development work, despite the original intent of the Energy Security Act that the Synthetic Fuels Corporation assist only commercial scale projects.

The second hearing was devoted to the environmental research and development activities related to synthetic fuels processes. The purpose of the hearing was to ascertain the level and adequacy of environmental research and development performed by the developing synthetic fuels industry and its use of federal R&D in that area. Two of the witnesses represented companies which had oil shale projects moving forward to construction. These witnesses stated that their shale technologies appeared to meet existing environmental regulations. Further, they could see no justification for additional regulation concerning toxicities, clean air, clean water, and waste disposal. They saw little need for any extensive federal research other than in visibility and modeling activities at the present time.

Other witnesses, with extensive experience in environmental monitoring and controls, pointed out that there are a number of outstanding environmental questions relating to synthetic fuels technology. For example, they stated that emission of and exposure levels to organic sulfides are expected to be low, but problems associated with fugitive or accidental emissions could be significant. Relative to synthetic fuels products, it was stated that there is a need for a wider range of carcinogen testing methods. Synthetic fuels have not been totally characterized relative to end use, and better environmental information on fuel characteristics and end-uses is needed. In general, these witnesses agreed that further environmental research and development would be necessary for the development of acceptable synthetic fuel processes.

The third hearing investigated the social, economic, and cultural impacts of the synthetic fuels industry on local communities. The witnesses were closely involved with the various aspects of synthetic fuels development. Witnesses also reported on aspects of statewide impact.

Testimony was received from representatives of two oil shale projects on housing and recreational facilities provided for new employees. The witnesses stated that direct assistance was also provided to nearby affected communities, including funds for administrative services, emergency medical services, school construction, and law enforcement. It was pointed out that, unfortunately, local tax revenues generated by construction and operation of a project typically lag behind infrastructure development. It was indicated that local government cannot finance the multitude of activities associated with actual synthetic fuel plant impacts. It was claimed that resources must be made available directly either from the Federal Government or the private enterprises that actually construct these facilities. All the witnesses agreed that it is very important to establish communication between the people planning to build and the citizens in the impacted area. One witness emphasized that energy industry leaders have realized that industry benefits when a community manages its growth effectively. He pointed out that if the community is an undesirable place to live, companies will have a high employee turnover, excessive absenteeism, and low productivity. This would translate into high construction costs, delays in schedules, and excessive operating costs.

In summary, the witnesses at the three hearings substantiated the interrelationships of synthetic fuels development, environmental uncertainties and socio-economic impacts.

3.2(d)—CLEAN AIR ACT

The Clean Air Act, as amended in 1977, provided that the Act would be reauthorized in 1981. Any reauthorization of the Act would include certain revisions that would come under the jurisdiction of the Committee on Science and Technology because several sections of the Act were concerned with environmental research. Furthermore, hearings previously held by the Committee had indicated that there were weaknesses in the scientific data base on which the standards of the Act were based. In view of the proposed amendments of the Act and these uncertainties, the Subcommittee held a series of three joint hearings on the Clean Air Act with the Natural Resources, Agriculture Research and Environment Subcommittee. In those hearings, the Subcommittees examined: 1) how and what kind of research and development could make the Act more effective; and 2) how certain changes in the Act would affect the Department of Energy Fossil Energy program.

Among the fifteen witnesses who provided testimony in the three Clean Air Act hearings, there appeared to be agreement that research on air quality monitoring and measurement required the leadership of the Environmental Protection Agency. It was stated that, as a general rule, state and local governments simply do not have the resources to carry out this research. It was stated also that strong, central leadership would assist in providing consistent, ambient monitoring throughout the Nation and reliable measurement techniques for source categories. Emphasis was placed on epidemiology as a vital component of an environmental research program. One witness, representing a pollution abatement equipment manufacturer, stated that the frequent changes in the Clean Air Act made flue-gas desulfurization equipment obsolete. Since it required 10–12 years to bring a technology from bench to commercial scale, manufacturers had little incentive to apply research and development to pollution abatement equipment.

There was considerable discussion on the acid rain phenomenon. There was no concensus on the causes, but several witnesses pointed to the large coal-fired powerplants as possible major sources of acid rain in the eastern half of the Nation. Witnesses appeared to agree that significant information was lacking, that there should be an increased research effort, and that the Federal Government should take the lead in this activity. The point was made that any acid rain research should include the participation of the Federal Government, its laboratories and contractors, colleges and universities, and the industrial sector.

Testimony was also received on the measurement and control of indoor air quality in existing and new homes. The point was made that in the vast majority of existing homes, the indoor air quality appears satisfactory but infiltration is a high energy cost factor. It was learned that in the case of new homes, energy and money could be saved by building a very tight structure, but then the indoor air quality would be more likely to be unacceptable. Possible methods for indoor air pollution abatement were discussed.

3.2(e)—THE NATURAL GAS OPTION—NEW RESOURCES AND NEW TECHNOLOGIES

A primary doctrine of President Reagan's energy policy is that the establishment of a truly free market in energy resources would provide the correct economic signals for conservation as well as research and development investment in traditional and alternative fuels. In particular, he proposed accelerated natural gas price deregulation. Concurrent with this proposal, the Department of Energy's budget for research and development on enhanced gas recovery technologies underwent major reductions, first in the FY 1982 budget request, and again in the FY 1983 budget request. Though natural gas price deregulation was an item of much Congressional and Executive Branch discussion during 1981, no legislation was sent to the Congress. As a result, the natural gas topic was still important in the consideration of the FY 1983 budget request.

To understand the effects of natural gas deregulation on the gas industry and its ability to pick up the research and development no longer pursued by the Department of Energy, the Subcommittee held two hearings on July 22, 1981 and July 30, 1982.

The hearings had three purposes:

1. To review the most recent projections of natural gas recovery from unconventional resources and to determine the extent to which new recovery technology is required to maximize production from these resources.

2. To examine the status of development of new technologies that will improve the efficiency of natural gas utilization, for example, fuel cells, gas heat pumps.

3. To examine the institutional and financial status of the gas industry and how this affects the industry's ability to develop and use the new technologies for both production and utilization.

In a broader sense, these hearings also were part of the Subcommittee's general examination of energy utilities; in other hearings the Committee took a specific look at the electric utilities' ability to respond to the Administration's new budget policies in the face of fuel price deregulation.

The witnesses spoke from many points of view: the research community, gas producers, pipeline companies, local gas utilities, and local citizens whose communities are being affected by substantial increases in gas drilling. What follows is a summary of what was learned by the Subcommittee.

Technology Needs of Unconventional Recovery.—Conventional gas wells are often associated with conventional oil wells. They are found in the same general areas, sometimes at the same depths, sometimes deeper. The geological formations are characterized by high permeability which permits large gas flows from a well on the order of millions of cubic feet a day. The unconventional resources are often much deeper than oil formations and have low permeabilities. This means that these wells may produce for a long time but they produce very, very slowly—sometimes on the order of thousands of cubic feet a day or at best hundreds of thousands of cubic feet a day. The unconventional resources of greatest interest are the western tight gas sands, the eastern Devonian shales the geopressured brines, and coalbed methane.

Substantial increases in production from these resources will depend on the development of improved recovery technologies. The technology needs differ depending on the resource. Both the tight gas sands and the Devonian shales have extremely low permeabilities and require the development of improved fracturing techniques so that the flow rates of these wells can be improved. The geopressured brines can have 60 cubic feet of methane per barrel of water but have problems with corrosion and reinjection of the brine after the gas is removed. The Devonian shales and coal bed methane are similar in that many wells need to be drilled to get marketable production, and the distribution system for recovering gas from many small wells is not in place.

Both the Devonian shales and the "bedded" western gas sands are under development as a result of the gradual deregulation of gas permitted by the Natural Gas Policy Act and the private sector is actively engaged in developing fracturing technologies for these resources. However, the vast majority of the western tight gas is contained in "lenticular" deposits, which are more difficult to locate and many require special drilling and fracturing techniques to obtain production. The gas industry is not investing in these resources at this time and have depended on the DOE program in this area in the past.

Energy Efficient Gas Utilization.—The continued use of gas from conventional resources as well as the possible large increments of natural gas available from unconventional resources, at significantly increased prices, makes it in the best interest of the consumers, the gas industry, and the nation as a whole to develop efficient technologies for utilizing natural gas. The Department of Energy, a number of gas companies, appliance manufacturers, as well as the Gas Research Institute have been involved in developing technologies and determining their best and nearest term markets. A number of technologies available include fuel cells for both electric power production and cogeneration on a small scale, gas heat pumps, improved gas furnaces, and gas hot water heaters.

There is a clear, near-term consumer benefit to be gained from efficient appliances. The gas distribution utilities, individually and through the Gas Research Institute, are supporting much research in this area. In addition, they are making plans to adjust their budgets in the light of DOE reduction to continue jointly funded projects like the 40 kw fuel cell program. However, the rapid rate of DOE's withdrawal makes it difficult and some worthy projects will be discontinued.

Institutional and Financial Conditions of the Gas Industry.—The gas industry is substantially different from the electric utilities and yet there are some similarities. The electric utilities are integrated production, transmission, and distribution companies. In the gas industry, there are only a few integrated production, transmission, and distribution compaines; the structure is such that the producers are separate from the pipeline companies, which are, in turn, distinct from the local distribution companies. Each of these entities have different problems and are effected by regulatory and financial conditions in different ways.

In general, the gas production companies are part of the oil production community; it includes some large oil companies and many independent producers. Thus, the incentives for improved production from unconventional resources is strongly affected by deregulation policies and decontrol of gas prices. Federal pricing and allocation policies are very important to the producers.

The witness from a major gas production company recognized the need to pursue an effective program for the research and development of new natural gas resources and technologies, however, in view of the current glut in the natural gas market, the deployment of such technology must be executed with caution. He asserted that government funding is needed to sustain some tight gas and coalbed methane projects until they have been perfected to a level that is financially assumable by industry. Progress in the research and development of unconventional gas resource technologies will require a cooperative industrial, university and governmental effort.

The major concern of the pipeline companies is to keep their pipelines full. The capital costs of pipelines are fixed costs and are passed on to the consumer through the distribution companies. Allocation policies are important to the pipelines and so their major regulatory concerns occur at the federal level.

The local distribution companies are generally investor owned utilities subject to state regulation by the State Public Utility Commissions. They are affected by the same kind of regulatory lags and consumer concerns facing the electric utilities. They have also suffered the same deterioriation in their standing with the financial community as the electric utilities. These companies must pass on the increased costs of deregulated natural gas and the higher priced unconventional gas to their customers. The Public Utility Commissions are often unsympathetic to these needs; the price increases are more unpopular than the increases in electric utilities costs, since for a given gas utility, they must be spread over a smaller consumer base and the per capita rate increase is much higher.

As higher priced gas comes onto the market, it is in the gas utilities' best interest to support the development of more efficient appliances for the utilization of gas and improved residential conservation practices. However, their current financial condition and the PUC's restrictions on the distribution companies with respect to conservation services programs makes it difficult for them at the present time to support much new technology development. Their market position is also affected by certain provisions of the Fuel Use Act, which mandates utilities to convert from gas to coal by 1990.

Committee publication number 97-28.

3.2(f)—District Heating and Cooling

District heating and cooling (DHC) systems utilize the waste heat from power plants and industrial facilities to provide energy for space conditioning and water heating to nearby buildings. Estimates of the total potential energy contribution from district heating and cooling systems to the nation's economy range as high as 5 quads by the year 2000. However, the large up front capital costs of such systems, uncertainties in future energy prices and institutional problems involved in bringing together all the factors who must help implement a DHC system make it very likely that only a small fraction of that potential will be realized.

The Subcommittee held a hearing on July 23, 1981, to learn more about the technology and its problems and to determine what, if anything, the new Administration intended to do to help remove some of the barriers to implementation of DHC systems where economically feasible. The Subcommittee learned that the Departments of Energy and HUD intended to terminate all funding for district heating and cooling programs, including technical assistance to communities seeking to implement their own DHC Systems, in FY 1982.

Committee publication number 97-39.

3.2(g)—Renewable Energy in the Eighties: The Need for Federally Funded Research and Development

General solar and biomass: May 28, 1982, Knoxville, TN. Solar electric technologies: July 28, 1982.

The Subcommittee held a symposium on May 28 and a hearing on July 28 on the needs for further research and development in renewable energy technologies as part of a year long effort to develop a set of multi-year funding recommendations for solar technologies. The symposium was held in Knoxville, Tennessee at the U.S. Pavilion of the 1982 World's Fair and featured witnesses from universities, national laboratories and industry testifying about biomass, alcohol fuels and solar energy in general. Witnesses expressed strong support for continuation of near term development, demonstration and testing activities and maintenance of a strong and well balanced federal solar research and development program. Biomass experts testified on the need for continued federal efforts up to the pilot plant or process development unit phase in biomass conversion technologies such as gasification and ethanol production from hydro-cellulosic feedstocks. Research on crop growing and harvesting was also supported.

On July 28 witnesses from three national laboratories (SERI, JPL and Sandia), universities and industry testified about the research needs confronting photovoltaics and solar thermal power systems—the two most promising solar electric technologies. Witnesses stressed the need for continuity in program funding and for care in managing the transition to the private sector. Support was also expressed for continuation of the technology development programs in flat plate silicon photovoltaic arrays, photovoltaic concentrators, parabolic dish and central receiver solar thermal power systems. Witnesses also stressed the need to continue operating of federally funded facilities and demonstration projects in order to provide industry with performance data on the solar technologies.

Committee publication number 97-130.

3.2(h)—U.S. SOLAR AND CONSERVATION TECHNOLOGIES IN INTERNATIONAL MARKETS

The Subcommittee received considerable testimony in its FY 1982 and FY 1983 authorization hearings about the threat to the competitiveness of U.S. conservation and solar technologies in world markets posed by cutbacks in DOE research and development programs at a time when the Europeans and Japanese are increasing or at least maintaining their own activities. To learn more about this potential problem and also to examine the adequacy of U.S. programs to promote the export of solar and conservation technologies, the Subcommittee held three days of hearings with the Investigations and Oversight Subcommittee on June 3, 17, and 21, 1982.

The first day was devoted to comparisons between research, development and demonstration programs. Several witnesses pointed out that European nations such as France, Germany and Sweden have increased their "near-term" development and demonstration efforts for conservation technologies with the goal of penetrating international markets. It was learned that the Japanese are rapidly catching up with our early lead in photovoltaics, in part due to their successful imitation of the Jet Propulsion Laboratory technology development program, which has been scheduled for elimination by the Administration. In general, the Subcommittee learned none of our International competitors is cutting back its research, development and demonstration efforts in conservation and solar as drastically as the U.S., and several, such as France and Japan, are increasing their efforts.

At the second day of hearings several witnesses testified on the need for export trading company legislation (now passed); increased assistance from the Trade and Development Program, Export-

Import Bank and the Department of Commerce International Trade Administration; better availability of low interest loans; and avoidance of government mandated embargoes and regulations to assist small and medium sized firms in marketing high technology products such as solar and conservation equipment. Administration witnesses from the Agency for International Development, the Trade and Development Program, the Ex-Im Bank, and the Department of Commerce testified in support of their programs and their commitment to assisting U.S. firms seeking to market conservation and renewable energy technologies abroad.

Committee publication number 97-132.

3.2(i)—BUILDINGS ENERGY RESEARCH

In April 1982 sixteen organizations representing the building trade and public interest communities presented the Subcommittee with a proposal for a Building Energy Research Program at DOE. The proposal called for the integration of the DOE active and passive solar programs with the buildings and community systems conservation program into one overall effort to improve the energy efficiency of American buildings. To evaluate the merits of the proposal, the Subcommittee held a hearing on July 22, 1982 at which Administration officials, architects, engineers and researchers testified on the merits of the proposal. Most of the witnesses endorsed the concept of coordinating the conservation and solar buildings efforts at DOE, but there was disagreement on how extensive a reorganization was needed, what role the government should play in a national buildings research program and what specific elements should be included in such a program.

Committee publication number 97-139.

3.2(j)—ENERGY EFFICIENCY: REGIONAL OPPORTUNITIES

In order to directly evaluate the effectiveness of energy efficiency improvements in major consuming sectors, the Subcommittee held two field hearings in the Midwest and Southern regions of the U.S.

On October 26, 1982, the Subcommittee held a hearing in Tallahassee, Florida, to examine the role of energy efficiency improvements in meeting the State of Florida's future energy needs. The Subcommittee heard from various state and local officials and building, industrial, utility and university representatives. While these witnesses indicated that the Florida State Legislature had enacted an aggressive energy efficiency program, they indicated that it still was necessary for the Federal Government to continue to support energy conservation research and development activities. Several witnesses indicated that significant reductions in federal funding would have serious effects on Florida's future conservation programs.

On January 22, 1982, the Subcommittee held a hearing in Des Moines, Iowa, to examine the energy efficiency programs being carried out in the Midwest region of the U.S. Witnesses representing the building, industrial and agricultural sectors discussed the feasibility of energy efficiency improvements in their various areas. In addition, a panel of utility executives reviewed current utility conservation programs and made recommendations for the future, including the need for a federal role.

Committee publications numbers 97-79 and 97-101.

3.2(k)—STATUS OF THE U.S. ELECTRIC POWER GENERATION SYSTEM

Electric energy use is closely linked to industrial productivity and the nation's economic health. The development of future electric power production technologies and the maintenance of adequate and reliable power supplies from increasingly complex systems requires a significant R&D effort.

Two sets of oversight hearings were held to discuss a number of issues facing the electric utilities and to provide insight on the role and effectivenss of Department of Energy research and development programs. The first set of hearings, on June 23 and 24, 1981, examined the implications for energy research, development and demonstration of the current financial and regulatory conditions facing the nation's energy utilities, especially the electric utilities. The hearings reviewed possible institutional changes in the utility industry that may impact the development and use of new energy technologies in both the near- and long-term.

The second set of hearings, held jointly with the Subcommittee on Energy Research and Production on June 8 and 10, 1982, focussed on R&D for electric power system reliability. Specifically, the major factors affecting power system reliability were related to the operations and strucutral features of the utility industry. Further examination of this relationship could provide the basis for evaluating and prioritizing electric energy production R&D programs.

Witnesses at these hearings agreed that in the past decade a number of events converged to precipitate a financial crisis for electric utilities: fuel supply disruptions and cost increases, oil price-driven inflation, mandated investments in pollution control equipment, rising construction costs, declining real rates of return, and unstable regulatory climates. Thus, restoration of the industry's financial health was perceived as being paramount to assuring adequate and reliable supplies of electricity to meet future demand.

Witnesses emphasized the importance of financial health on R&D, in that an industry in fiscal crisis will retrench from R&D as a non-recoverable expense.

These financial issues notwithstanding, the importance of R&D for expanding fuel resource development and demonstrating advanced technologies which promise higher energy conversion efficiencies and reduced environmental impact has not diminished. Several federally-sponsored technology development programs were lauded for their success in providing industry with the technical wherewithal to bring these technologies to commercial readiness—a financial undertaking that industry could not have accomplished alone.

The abrupt elimination of DOE support for the development and demonstration of technology was characterized as creating a chaotic situation. On balance, therefore, the witnesses presented a consensus that a legitimate federal role in electric energy R&D is warranted because of the industry's regulated status, financial heath, and the importance of electricity to the national economy.

Committee publication number 97-131.

3.2(l)—INCENTIVES FOR ENERGY RESEARCH AND DEVELOPMENT

On July 15, 1981, the Subcommittee held hearings to examine the impact of tax incentives and the decontrol of crude oil prices on improving the climate for future investment in energy research and development. These hearings also reviewed the Administration's energy policy as it influenced the future development of new energy technologies. In accordance with this policy, the Administration had redirected the Department of Energy's research and development programs to focus on long-range, high-risk activities. Based on this approach, the Administration had requested approximately $1.66 billion in FY 1982 for the fossil, solar, geothermal and energy conservation research and development programs and general science and basic energy research activities, a decrease of $1.4 billion from FY 1981 levels.

Testimony received from various industrial companies and private consultants strongly supported the need for continued direct Federal support in energy research and development. While tax incentives were viewed as helpful, several witnesses emphasized that adequate Federal funds were needed to demonstrate the viability of various new energy technologies and to ensure their reliability. Generally, the witnesses indicated that higher energy prices and tax incentives would not adequately compensate for the loss of direct Federal support as claimed in the Administration's budget request. In addition several witnesses recommended the passage of additional research and development tax incentives.

On July 13, 1982, the Subcommittee held a hearing to examine more specifically the role of various business financial incentives, including energy tax incentives, on the development and commercialization of renewable energy technologies. This hearing specifically addressed the question of whether there was a need to provide any additional financial incentives to stimulate the commercialization of these technologies, such as extending the current termination date (December 31, 1985) for the fifteen percent business energy tax credits for renewable energy technologies.

Testimony was received during this hearing from representatives of the solar industrial community and various financial energy analysts. Overall, several witnesses stressed the benefits of using tax incentives to stimulate the commercialization of new renewable energy technologies. According to various witnesses, tax incentives would play a key role in the development of many new solar technologies for business applications such as solar thermal, large wind and solar photovoltaic energy systems. For example, in reviewing the status of the solar thermal industry developing point focus central receiver technology, it was emphasized that the date of commercialization for this technology would depend to a large extent on the availability of an energy investment tax credit. In addition, one witness also indicated that targeted energy tax incentives were vital in order to allow renewable energy ventures to compete more effectively for the limited amount of available market capital.

All of the witnesses strongly supported the need to extend the current business energy tax credits for renewable energy technologies through the year 1990. They indicated that the current tax incentives have had a positive effect in accelerating the development of viable solar markets, but that the current termination date would preclude the timely commercialization of various new solar technologies. They also suggested that a tax credit extension would provide the stable financial environment that was necessary to encourage third party renewable energy projects that could not be completed before the year 1985 due to long lead times or immature technologies. Various examples were given, such as the development of the central receiver technology and advanced large wind energy systems. In the case of the central receiver technology, it was pointed out that business energy investment tax incentives through the year 1990 were vital in order to stimulate the commercialization of first generation systems. In addition, these incentives were also justified on the grounds that Administration cuts in the solar program had delayed the cost reductions envisaged for solar technologies when the original tax credit had been passed into law.

In light of the testimony received during these hearings, Chairman Fuqua and Mr. Fish, Jr., introduced legislation extending the current termination date for the business renewable energy tax incentives until December 31, 1980. In introducing this legislation, they indicated that this tax incentive could continue to play a key role in the development of these technologies and a balanced national energy program overall. In addition, the General Accounting Office had also been asked to undertake a study of the effectiveness of business energy tax incentives and the projected losses of Federal revenues if these incentives were extended. This report was scheduled to be released near the end of the 97th Congress.

Committee publication number 97-31.

3.2(m)—SOCIETAL RISKS OF ENERGY SYSTEMS

One of the major issues in energy policy discussions concerns the assessment of comparative risks of various energy systems and fuel cycles. Application of risk analysis to energy systems dates back to early Atomic Energy Commission safety studies on nuclear power. More recently, the coal-nuclear-renewable energy debate and the outcome of the Three Mile Island accident have added to the body of knowledge and growing literature on the subject. Risk analysis, in itself, is a rapidly developing field of study.

As Congress considers programs for energy research, development and demonstration and reviews new and existing environmental health and safety legislation, it was deemed appropriate for the full Committee to examine the current state-of-the-art in risk analysis and its application to energy systems. Indeed, the Committee's interest in this area had already been well established in the 96th Congress.

The Subcommittee staff took the lead role in preparing a full Committee hearing on this subject, which was held on June 18, 1981.

In general, the hearing gave the Committee a better understanding of the strengths and weaknesses of risk analysis and its role in energy policy decisionmaking.

3.2(n)—THE IMPACT OF PLANNED REDUCTIONS IN FORCE AT THE DEPARTMENT OF ENERGY

On September 17, 1981 the Subcommittee held oversight hearings to examine the facts and management rationale leading up to the proposed imminent reduction in force in DOE's Conservation and Renewable Energy programs. The reorganization of management structure and reduction in needed staff levels were examined by the Subcommittee. The procedures for effecting the reduction in force were examined in detail.

At issue was whether or not the Administration had a *de facto* plan for the elimination of the conservation and renewable energy programs by closing down the staffing operation without Congressional concurrence. The Subcommittee's major concerns were that these actions were being taken prior to enactment of Congressional appropriations, and that DOE management had appealed to OMB for 324 positions over and above the currently targeted staff levels.

Witnesses representing the Administration presented the case that these actions would provide a more efficient and effective organization in light of the reduced overall budget levels that Congress had already endorsed in the budget resolution. The union representing the DOE employees presented its concerns about the proposed RIF actions.

Committee Publication Number 97-48.

3.2(o)—DEPARTMENT OF ENERGY NATIONAL LABORATORIES

The Department of Energy owns and funds a unique and valuable system of facilities for energy research and development, the DOE national laboratories. This system consists of 12 so-called "mutiprogram laboratories" and 30 program-dedicated facilities (fossil, solar, nuclear, high energy physics, etc.).

These facilities represent a capital worth in the many tens of billions of dollars and employ nearly 100,000 contractor and government employees. Some of these facilities date back to the creation of the Atomic Energy Commission in 1946, while others, such as the Solar Energy Research Institute, have been established only within the last decade. Some of the nation's top scientific and technical talent and some of the best research equipment in the world are located at these facilities.

The relationships between the laboratories themselves, their contractors and DOE headquarters are continually evolving and are quite complex. While the unique role of the DOE national laboratories in energy R&D is readily acknowledged, there has been persistent criticism, both inside and outside the Federal Government, that: 1) the laboratories' privileged status may unfairly exclude outside R&D contracting with private industry and the universities; 2) the laboratories are not pursuing sufficiently aggressive programs of technology and information transfer.

In order to explore a wide variety of issues concerning the health, vitality, management and future role of the laboratories, the Subcommittee joined with the Subcommittee on Energy Research and Production to hold three hearings.

The first hearing, held on July 29, 1982, examined the general area of DOE national laboratory relationships with industry and the university community. Dr. George Keyworth, the President's Science Advisor, in his first formal appearance before the House of Representatives, concluded his testimony on that occasion by identifying three required initiatives:

> . . . a penetrating new analysis of the lab's role in view of our new situation and needs; an increased willingness on the part of Government, industry, and academia to cooperate and collaborate for the greater good of the country; and the exercise of far more imagination and ingenuity in creating the institutional change necessary to meet the critical needs of our times and the future.

The other distinguished witnesses, Dr. D. Allen Bromley, President of the American Association for the Advancement of Science, Dr. Arthur Benche, Senior Vice President for the General Electric Company, and Dr. Walter Massey, Director of Argonne National Laboratory provided critiques of the performance of the DOE labs and their cooperation with industry and the universities. There was a diversity of opinion expressed, but all witnesses agreed that it was timely to reassess the role of the laboratories.

Subsequent to the latter hearing, the Office of Science and Technology Policy (OSTP), at Chairman Fuqua's request, initiated a study of the entire civilian federal laboratory system by the prestigious White House Science Council. DOE Deputy Secretary Davis requested that DOE's Energy Research Advisory Board (ERAB) undertake a similar study of the DOE multiprogram national laboratories. The ERAB report was published in September 1982. The OSTP study is scheduled to be published in 1982 or early 1983.

The second joint hearing in the series, held on June 2, 1982, was concerned with the impact of budget uncertainties on DOE's national laboratories. The Subcommittees learned of the difficulties facing the labs in terms of loss of technical expertise and program continuity due to abrupt cutbacks in federal energy R&D funding in certain areas. The directors of four of the laboratories, Oak Ridge, Los Alamos, Lawrence Berkeley and Brookhaven, discussed the problems associated with shifting energy R&D priorities, changes in DOE's project management philosophy, and the negative impact of the annual federal budget cycle and its vagaries on the laboratory planning process.

At the second hearing the Subcommittees asked the managers of the Oak Ridge, San Francisco, Chicago and Richland Operations Offices to testify on the guidance they have been giving to the laboratories during the recent period of budget uncertainty.

Most of the witnesses agreed that because of recent experiences, it would be desirable to put the laboratories on multi-year budget cycles.

The third joint hearing was held on December 2, 1982. Its primary purpose was to review the results of the Energy Research Advisory Board's Report on the Multiprogram National Laboratories.

The Subcommittees were interested in ERAB's recommendations regarding: a) the appropriate roles and missions of the laboratories vis-a-vis industry and universities; b) the scientific and technological capabilities of the laboratories; c) the Department's policies and procedures with respect to the laboratories; and d) the effectiveness of the Department's use of the laboratories in meeting its energy objectives.

The final hearing also explored selected issues involving greater industry-national laboratory cooperation including:

—The appropriate ratio of in-house to outside users at DOE labs.

—Possibilities for full-cost recovery or other user-fee mechanisms for industrial users of DOE facilities.

—Industry participation in DOE planning for new research facilities.

—New initiatives for exchange of scientific information and technology transfer.

These views were discussed by a panel consisting of DOE's Director of Energy Research, the ERAB chairman and vice-chairman, and an industry representative who served on the ERAB national laboratory panel. Specific unresolved issues may receive detailed follow-up by the Subcommittees in the 98th Congress.

Committee publications Numbers 97-34 and 97-114.

3.2(p)—FEDERAL ENERGY RESEARCH AND DEVELOPMENT PRIORITIES

The 97th Congress was marked by continuous debate over the merits of the Reagan Administration's energy policy in general and its energy R&D policy in particular. The Subcommittee not only examined the Administration's premises in each of the energy technology areas under the Subcommittee jurisdiction, but also joined with the Subcommittee on Energy Research and Production to look at the overall balance and priorities in federal energy R&D programs. The two Subcommittees held joint oversight activities to look at crosscutting issues that are common to most energy technologies, such as appropriate federal role, ability of the private sector to carry out R&D, criteria for setting priorities, and the pros and cons of large, federally funded demonstration projects.

On October 15, 1981 the two Subcommittees co-sponsored with the Congressional Research Service a seminar entitled, "Reagan Administration Policies for New Energy Technologies." The seminar provided an overview of the scope, direction, and implications of the Administration's energy R&D policies and their impact on Department of Energy programs and on several affected industries. Three particular areas were emphasized: nuclear energy, synthetic fuels, and renewable energy technologies. The seminar format allowed participants to have a frank interchange with a leading Administration energy spokesman (DOE's Director of Policy Planning and Analysis), Dr. J. Hunter Chiles.

In late 1981 DOE received from its own Energy Research Advisory Board (ERAB) a report on federal energy R&D priorities. On March 5, 1982 the two Subcommittees held a joint hearing on the report's implications for the scope, balance and funding levels of the DOE R&D programs. The hearing provided a broad policy review just prior to the Subcommittee's FY 1983 DOE budget review hearings. Members of the Subcommittee questioned the two witnesses, the DOE Deputy Secretary, W. Kenneth Davis, and ERAB Chairman, Louis Roddis, about the ERAB's recommendations to increase funding for utilization and conservation technology, which ERAB concluded was too low compared to the supply technologies. There was much discussion about the desire or willingness of the private sector, both the regulated and unregulated components, to assume responsibility for near- and mid-term technology development. In these and other areas it was pointed out that the ERAB report findings and recommendations contradicted the Administration's energy R&D policies.

In December, 1981 and February, 1982 the full Committee examined the Administration's R&D policies in a more general context in a series of four hearings entitled, "U.S. Science and Technology Under Budget Stress." The Subcommittee provided substantial staff support for these hearings. These full Committee hearings also provided the policy framework for later Subcommittee review of the FY 1983 DOE R&D budget request.

3.2(q)—FISCAL YEAR 1983 DEPARTMENT OF ENERGY BUDGET REVIEW

Title X of Public Law 97-35 authorized appropriations ceilings for DOE civilian programs for fiscal years 1982, 1983 and 1984. Therefore, the Subcomittee did not initiate authorizing legislation for FY 1983 DOE energy R&D programs. However, as part of its oversight responsibilities, the Subcommittee undertook a detailed review of the Administration's FY 1983 DOE budget request to inform itself and be in a position to advise the appropriate House Subcommittee on Appropriations of the specifics contained in the budget request.

The Subcommittee held a series of nine hearings in March, 1982 to review the FY 1983 budget for the conservation, renewable energy, fossil energy and basic research programs. Both DOE and non-government witnesses testified at these hearings, which provided the Subcommittee with a forum to critique the Administration's budget proposals.

Based on these hearings, Chairman Fuqua developed a set of his own recommendations for the FY 1983 funding levels for DOE civilian R&D programs. Mr. Fuqua's recommendations were included in his testimony before the House Energy and Water Appropriations Subcommittee on April 1, 1982 and before the House Interior Appropriations Subcommittee on May 13, 1982. Also included in these statements were recommendations for energy programs within the jurisdictions of the Subcommittees on Energy Research and Production; Transportation, Aviation and Materials; and Natural Resources, Agriculture Research and Environment. His funding recommendations for programs within or associated with the Subcommittee's jurisdiction included: redirecting funds within the total for General Science and Research to provide an additional $6 million for nuclear physics, $6 million for life sciences and nuclear medicine and $5 to $10 million for continued construction of the Isabelle accelerator; an increase of $137 million for solar energy, for a total of $209 million; a total of $34.81 million for geothermal energy, including $20 million for the 50 MWe binary demonstration power plant; an increase of $213.4 million for fossil energy, for a total of $320.3 million; and an increase of $135.3 million for conservation R&D, for a total of $152.8 million.

Committee publication Number 97-100.

3.3—THE SUBCOMMITTEE ON NATURAL RESOURCES, AGRICULTURE RESEARCH AND ENVIRONMENT

3.3(a)—THE GREAT LAKES PROTECTION ACT OF 1981. (H.R. 3600)

To amend the National Ocean Pollution Planning Act of 1978 to provide greater coordination of research efforts concerning the Great Lakes, and for other purposes.

Summary and background of legislation

The Great Lakes are an important resource to the United States, Canada, and the world. Moreover, 20 percent of this country's population and 25 percent of American industry rely on its waters. In the past 20 years, however, the Great Lakes have experienced severe water pollution problems such as phosphorus-caused euthrophication and toxic chemical contamination. Compounding these concerns is the fact that over 20 federal agencies and their subsidiaries are involved in Great Lakes environmental research, but presently no mechanism exists to effectively coordinate these groups.

Congress responded in 1978 to the need for coordination of federal research in coastal areas by enacting the National Ocean Pollution Planning Act. This Act requires that a five year plan be developed to provide guidance to the numerous federal agencies and groups involved in coastal areas for purposes of research coordination. The Great Lakes are coastal areas, and, therefore, included in the plan. In testimony received by the Subcommittee, however, criticism of the plan emphasized the neglect of Great Lakes research needs and issues.

H.R. 3600 amends the National Ocean Pollution Planning Act to provide for a regional approach for coordination of Great Lakes environmental research, development, and monitoring activities. As reported by the Subcommittee the bill had three major provisions:

1. It directs Congress, for the first time, to declare that the protection of the environmental quality of the Great Lakes be the continuing policy of the Federal Government.
2. It allows for the establishment of a Great Lakes Research Office with an Executive Director to be responsible for preparing reports to Congress and the President. The major responsibility of the Executive Director is to provide for coordination of Great Lakes research activities among Federal, State, and local groups.
3. It requires the Executive Director to determine when a Federal action, pursuant to Section 102(2)(c) of the National Environmental Policy Act, significantly affects the Great Lakes. When such significance is determined, the Executive Director shall require each Federal Agency preparing an Environmental Impact Statement to include an appendix making special reference to the Great Lakes.

Legislative history

H.R. 3600 was introduced on May 14, 1981 by Mr. Blanchard and jointly referred to the Committees on Science and Technology and Merchant Marine and Fisheries. The Subcommittee on Natural Resources, Agriculture Research, and Environment held hearings on December 15, 1981 and March 9, 1982.

As a result of these hearings, certain technical and substantative changes were made in H.R. 3600 and it was included as Title IV of H.R. 6324, the "Atmospheric, Climatic, and Ocean Pollution Act of 1982", for Subcommittee markup on May 5, 1982. In that meeting, the Subcommittee ordered reported, by a 7 to 3 recorded vote, a clean bill to the full committee. Title IV of H.R. 6324 was considered, amended, and ordered reported by the full Committee on Science and Technology on May 18, 1982. (see full committee activities for further actions taken).

The hearings transcripts are printed in Committee on Science and Technology publication No. 97-120.

3.3(b)—THE NATIONAL CLIMATE PROGRAM ACT AMENDMENTS OF 1982. (H.R. 5401)

To amend the National Climate Program Act to authorize appropriations for such Act for fiscal years 1983 and 1984 and for other purposes.

Summary and background of legislation

Public Law 95-367 established a National Climate Program consisting of three major elements: (1) coordination of ongoing Federal activities related to climate, with specific attention to program planning, management and budget; (2) identification and funding of essential climate research programs; and (3) effective dissemination to and application by the user community of existing and forthcoming climate-related information.

To accomplish these objectives, the Secretary of Commerce established in NOAA a National Climate Program Office (NCPO) responsible for implementating the provisions of the Climate Act. Included among these responsibilities was preparation of long-term (five-year) plans outlining goals and priorities of the program. The plan includes an identification of the roles of various Federal agencies in the program to achieve the goals enumerated in the plan, and a summary of program accomplishments as an aid in assuring that such goals were met. In essence, the office envisioned in the Climate Act was to serve as the focal point for Federal climate-related activities in order to effect a coherent, comprehensive, national program of climate research, applications, and services.

H.R. 5401 was introduced on January 29, 1982. In the bill $1,800,000 is authorized for the National Climate Program Office for each of the fiscal years 1983 and 1984. H.R. 5401 contained a number of additional provisions amending Public Law 95-367. First a Climate Program Policy Board is established. All agencies participating in the Program should be represented at the Board at a policy level sufficiently high to make presumptively binding budget commitments. The Board functions as a "board of directors" for the Program, responsible for long-range planning and presentation of budgetary recommendations to OMB. Chairmanship of the Board shall rotate every two years in order to foster inter-agency participation.

The National Climate Program Office shall remain within NOAA and function as staff to the Policy Board. The Program Office is responsible for administering the National Climate Program, for staffing the Climate Program Policy Board, for providing budgetary analyses for the Policy Board, for coordinating inter-agency participation in international activities, and for administering the Intergovernmental and Experiment Forecast Center Program.

The goals of the Intergovernmental and Experiment Forecast Center Programs were retained. However, the matching funds provisions of the Intergovernmental Program were removed. The National Office is provided with the specific authority to fund climate activities in areas not being adequately addressed by any Federal agency ("gap" funding).

Title III also specifies that of the funds authorized for the National Climate Program Office pursuant to section 201(a)(4) of the Act, specified percentages shall be made available to both the Intergovernmental Program and the Experimental Climate Forecast Centers. This provision highlights the importance that the Committee attaches to these programs and ensures that additional funding will be available to them, should the appropriation for the National Climate Program Office be increased above the Administration request.

Legislative history

H.R. 5401—"The National Climate Program Act Amendments of 1982"—was developed as a result of oversight hearings held by the Committee during the 97th Congress. During hearings held on the fiscal year 1982 reauthorization of the National Climate Program by the Subcommittee on Natural Resources, Agriculture Research, and Environment on March 6, 1981, several concerns were raised about the existing Climate Program. All of the non-agency witnesses agreed that neither the Intergovernmental Climate Program nor the Experimental Climate Forecast Centers had met the goals specified for them in the organic legislation. In addition, the National Climate Program Office was criticized for its failures to affect OMB's budget process significantly, to provide funding for "gap" activities, and to coordinate long-range planning for government climate activities—in short, to function as a true national climate office.

The Committee asked witnesses at the hearing to set up an ad hoc group to prepare recommendations for the Committee on ways to increase the effectiveness of the program. The group included the Chairman of the Climate Board of the National Academy of Sciences, the Chairman of National Climate Program Advisory Committee, the President of American Association of State Climatologists, and the acting director of the National Climate Program Office. At a series of meetings throughout the summer of 1981, the group met with representatives of participating government agencies, members of the Advisory Committee members of the Climate

Board and others to discuss issues and develop suggestions for legislative changes.

Most of these suggestions were incorporated into H.R. 5401, which was introduced by Mr. Scheuer on January 29, 1982. On March 16, 1982 a hearing was held by the Subcommittee on Natural Resources, Agriculture Research and Environment to review the progress of the National Climate Program Office in fulfilling the mandates of Public Law 95-367 and to receive comments on the bill, H.R. 5401.

As a result of this hearing, technical changes were made in H.R. 5401, which was later incorporated as Title III of H.R. 6324. (See full Committee activities for further actions taken.)

The full transcript of the March 16 hearing is available as Committee on Science and Technology publication No. 97-95.

3.3(c)—OVERSIGHT OF THE NATIONAL CLIMATE PROGRAM

Background

Legislation was enacted in the 95th Congress (Public Law 95-367; 92 Stat. 601-605) to create an expanded national program in climate research and services. Designed to centralize planning and to improve interagency and intergovernmental coordination, the National Climate Program Act (Climate Act) emphasized early production and delivery of useful climatic information and services--based on current knowledge of climate and better use of existing climatic data—to a wide range of users. Simultaneously, the Climate Act sought to expand through research the understanding of the dynamics of change and variability in the climatic system and its societal consequences as a basis for policy decisions that depend on improved predictions and impact assessments. The Act directed the President to formulate a national climate program and define the roles in this program of the twelve Federal agencies vested with responsibilities in climate research and services. In order to coordinate the program, it established in the National Oceanic and Atmospheric Administration a National Climate Program Office (NCPO).

Implementation of the provisions of the Act has proceeded slowly. The Administration's failure to produce a final climate program two years after passage of the Climate Act was viewed by the Committee as a serious problem. In addition, neither the Intergovernmental Program nor the Experimental Climate Forecast Program had received more than token support during the first two years of the Program.

Summary of hearing

On March 5, 1981, hearings were held to assess the progress of the implementation of the National Climate Program Act.

At the hearings, the Subcommittee reviewed the National Climate Program Office's Five-Year Plan (completed in November, 1980), the Office's efforts to implement the Program, and future directions for fiscal year 1982 and beyond. Testimony from non-governmental witnesses was uniformly critical of the slow development of the Intergovernmental Climate Program and the lack of authority, particularly budgetary, of the National Climate Program

Office. Chairman Fuqua and Scheuer recommended, in light of these recommendations, that an ad hoc group be convened, consisting of representatives of the National Academy of Sciences, the American Association of State Climatologists, and the Climate Advisory Board. The ad hoc panel would review the performance of the Program in light of the mandates of the Climate Act and recommend to the Committee any changes in the organic legislation which would facilitate development of the Program. The recommendations of the ad hoc panel were ultimately incorporated, to a large degree, in the bill H.R. 5403, the National Climate Program Act Amendments of 1982.

The complete record of the hearing is produced in Committee on Science and Technology publication No. 97-95.

3.3(d)—FISCAL YEAR 1982 REVIEW—NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

Background

As the lead agency for federal activities involving atmospheric and oceanic research and services, the National Oceanic and Atmospheric Administration conducts numerous programs under the jurisdiction of the Subcommittee. Prior to the initiation of specific authorizing legislation for various NOAA programs, the Subcommittee conducted annual oversight hearings on the agency and its budget. On the basis of information thus gained, the Science and Technology Committee made, for programs within its jurisdiction, funding recommendations to the House Budget and House Appropriations committees.

Summary of hearing

On March 12, 1981, the Subcommittee held hearings to receive testimony on the proposed FY 1982 budget for NOAA programs of interest. Representing NOAA at these hearings were Acting Administrator James P. Walsh, Dr. Richard E. Hallgren, Acting Assistant Administrator for Oceanic and Atmospheric Services, and Dr. Ferris Webster, Assistant Administrator for Research and Development. In addition to providing a general overview of NOAA's programs and the resources supporting those activities, topics of special attention at the hearings included the proposed closure of a number of National Weather Service Offices, NOAA's involvement in research and regulation of ocean dumping, transfer of research and development into NOAA's operational arms, the ability of NOAA to upgrade the quality of its forecasts and other services in the face of fiscal year 1982 budget cuts, and the coordination of NOAA's programs with those of the other agencies.

The complete record of the hearing is produced in Committee on Science and Technology publication No. 97-83.

3.3(e)—PHARMACEUTICAL INNOVATION: PROMISES AND PROBLEMS

Background

The Subcommittee, in its oversight of the Federal Food and Drug Administration's new drug approval process, became aware of serious delays in the approval of certain "breakthrough drugs." The

Subcommittee's investigation represented a continuation of an effort in this area started in the 95th Congress by the Subcommittee on Domestic and International Scientific Planning and maintained in the 96th Congress by the Subcommittee on Science Research and Technology.

Concerns that the regulatory processes at FDA imposed needless delays and costs on the introduction of new lifesaving drugs and vaccines led the Subcommittee to schedule a joint hearing with the Subcommittee on Investigations and Oversight on April 27,1981.

Summary of hearing

The hearing was chaired jointly by Congressmen Scheuer and Gore.

The first witness, Dr. Gilbert McMahon of Tulane University presented an overview of pharmaceutical breakthroughs which were about to make new progress in the treatment and care of dozens of diseases and disabilities. Dr. Lew Sarrett, Vice President of Merck and Company, presented testimony on opportunities for scientific advances in vaccines. Dr. Floyd Bloom of the Salk Institute and Dr. Frederick Goodwin of the National Institute of Mental Health testified regarding innovations in the field of neuropsychopharmacology, with particular emphasis on the dramatic progress in the development of drugs to treat mental illness and pain. Dr. Elliot Autman of Harvard University testified on innovations in the fieled of cardiac drugs, including "beta blockers" that reduce cholesterol levels in the bloodstream. Finally, Dr. Andre Robert of the Upjohn Company and Dr. Richard Faust of the Hoffman-La Roche Company presented testimony on breakthroughs in the development and application of "prostoglandins", a hormone-like substance which plays a vital role in cellular metabolism and functions. Prostaglandins are of tremendous value in the control of fertility, blood pressure, muscle disorders and blood clots.

3.3(f)—ESTABLISHMENT OF A PINE BARREN RESERVE

Background

Necessitated by the urgent requirement to preserve the quality of drinking water for communities dependent on sole source aquifiers, the Subcommittee received testimony on the need to develop legislation to establish a Pine Barren Reserve in Suffolk County, Long Island.

The Environmental Protection Agency, though the authority of section 1424(e) of the 1974 Safe Drinking Water Act, has designated the aquifers underlying Long Island as "sole source," which means that they are the sole or principal source of drinking water for the area, and if contaminated would create a significant hazard to public health. After this designation, no project which the EPA Administrator determines may contaminate the aquifer and create a public health hazard may receive any Federal financial assistance.

A recent report by the New York Public Interest Research Group on the widespread groundwater problems on Long Island concludes that "the sole source of Long Island's drinking water is in danger of deteriorationg into a severely contaminated industrial sewer." A number of sources are believed to have caused pollution: leaking landfill dumpsites; aging gasoline storage tanks; failing septic tank systems; accidental, illegal or improperly regulated discharges; and runoff and drainage from agricultural areas. In eastern Suffolk Country 34 wells used for drinking water and agricultural purposes have been closed due to contamination by the pesticide Temik (or aldicarb), widely used on potato crops. Across the Island, 23 wells in the Nassau County and 19 in Suffolk County have been closed in the last three years as a result of contamination by various pesticides, herbicides, and other organic chemicals. The uppermost glacial aquifer now is little used for drinking water purposes due to pollution. The middle Magothy and lower Lloyd aquifers are believed to be less polluted, but are not pollution-free.

Most of the pollutants recently detected in groundwater are in minute amounts, and scientists and toxicologists are uncertain about the health effects of consuming water contaminated with trace levels of organic substances. However, some believe that the cumulative effect has increased risk of illness and cancer.

Summary of hearing

On May 8, 1981, the Subcommitte met in Southampton, New York and heard testimony from nearly three dozen people. The purpose of this hearing was to afford an opportunity for public comment, and initial reaction by government agencies, on a draft bill that would provide Federal financial assistance for the acquisition of lands in the Coastal Pine Barrens area. Official comments by the Environmental Protection Agency (EPA) and the Department of Interior were presented as well as a variety of state and local officials, citizen groups, environmental organizations and individuals.

The hearing addressed the state of knowledge regarding groundwater contamination and quality control, as well as the administrative aspects of the land use mechanism proposed by the draft bill. Alternate means for accomplishing the objectives of the bill with regard to groundwater purity were also addressed. This would be accomplished through the development of a comprehensive plan and a Federal/state/local government partnership to implement the plan.

Specifically, the Federal Government would provide financial assistance for the acquisition of lands having critical ecological value and for development of the comprehensive management plan for the area. The Federal Government would also assist state and local governments in developing a governmental mechanism to carry out the comprehensive plan and would encourage the coordination of government programs affecting the area. The planning entity established through the proposal would include representatives from the towns of Brookhaven, Riverhead, and Southampton; Suffolk and Nassau Counties; the Long Island Regional Planning Board; the Interior Department; the New York Joint Legislative Commission on Water Resource Needs of Long Island; and the Pine Barrens Task Force.

The main question posed for Congressional consideration was whether the adoption of the resources protection strategy of the Pinelands National Reserve is appropriate for the protection of Long Island's Coastal Barrens resources, especially groundwater resources. EPA responded by summarizing the existing legislation protecting groundwater and the research and development that has been conducted, and addressed the special problems of Long Island. The agency suggested that existing plans and regulations, especially at the state and local level, presented the best solution to the Pine Barrens problem. The Department of the Interior (DOI) also spoke against Federal involvement, and described several other land use and organizational options that could prove viable for the Pine Barrens area. DOI noted the Federal Government's new policy representing an unwillingness to acquire additional lands for this purpose.

The great majority of the remaining witnesses recognized the need to protect groundwater quality, and most supported the draft bill as the preferred mechanism by which to accomplish this purpose. Some, however, raised objections due to the possible removal of lands for the tax roles. A number of suggestions to perfect the draft bill were also received.

The complete record of the hearing is produced in Committee on Science and Technology publication report No. 97-15.

3.3(g)—CLEAN AIR ACT RESEARCH AND DEVELOPMENT

Background

The Clean Air Act, as amended in 1977, provides that it shall be reauthorized in 1981. Any reauthorization of the Act will most likely include certain revisions which will affect the jurisdiction of the Science and Technology Committee. Several sections of the Act—Sections 101(c), 103, 104, and 153—are concerned with environmental research. The Subcommittee has held hearings in the last three Congresses, in areas related to the Act in the following areas: diesel particulate standards, acid participation, special urban air pollution problems, R&D related to sulfates in the atmosphere, and joint hearings with the Subcommittee on Health and the Environment of the Committee on Interstate and Foreign Commerce on EPA's Community Health and Environmental Surveillance System (CHESS).

The objectives of the 1981 hearings were:

1. To examine the basis for the research and development emphasis on the technology of air pollutant control as opposed to the technology of pollutant monitoring and measuring,
2. To examine the status of research in determining the health effects of air pollutants, and
3. To explore the status of existing research and of that needed to address new issues under the Clean Air Act, such as acid rain, pollutants from synthetic fuels, and indoor pollution.

Summary of hearing

Joint hearings with the Subcommittee on Energy Development and Applications were held May 19, 20, and 28, 1981, to examine the alternative of achieving air quality performance standards with an approach that combines pollutant monitoring and measuring technology with back-end control. Secondly, the hearings were to examine the adequacy of the scientific data base used to determine the health effects of air pollutants. Finally, the hearings were to explore several of the new issues in air pollution. Specifically, research on standards for acid rain, new pollutants from synthetic fuel technology, and indoor pollution.

Testimony from the witnesses reflected a variety of divergent opinions with the exception that all agreed that the Act needed changes. Much of the testimony from industry based witnesses reflected a view that the Act was unduly restrictive and arbitrary in many provisions. Further, several witnesses challenged the accuracy of the scientific research on which many of these provisions were based.

On the other hand, several witnesses reflected on weaknesses of the Act to control air pollutants such as toxic chemicals, and acid rain, despite sound scientific research documenting the negative input on health and the environment.

The hearings presented arguments that addressed the strengths and weaknesses of much of the scientific research on which the Act is based. The hearings also pointed to areas where additional research is needed.

These hearings provided the background for indepth follow-up activities by the Subcommittee. These included hearings on acid rain as well as the introduction of legislation.

The full transcript of the hearings can be found in Committee on Science and Technology Publication No. 97-64.

3.3(h)—RESEARCH ON THE ENVIRONMENTAL EFFECTS OF SEWAGE SLUDGE DISPOSAL

Background

Oversight and authorization hearings of both the Environmental Protection Agency and the National Oceanic and Atmospheric Administration indicated a serious lack of information on the health consequences of industrial and human waste disposal. Of particular concern to the subcommittee was the absence of data evaluating the various alternative methods of disposal.

The Marine Protection, Research and Sanctuaries Act of 1972 and its associated regulations would have eliminated the ocean disposal of all environmentally degrading sewage sludge by December 31, 1981. New York City and other affected municipalities sought both administrative and judicial relief from the deadline, claiming that the land-based alternatives to sewage sludge disposal were far more costly and potentially more hazardous to the health of its citizens. In April, 1981, U.S. District Court for the Southern District of New York struck down the 1981 deadline with regard to ocean dumping of sewage sludge. In light of the increasing pressure to permit the use of the oceans for disposal of certain wastes, the Subcommittee was concerned that increased waste disposal in the oceans will occur without an adequate understanding of the comparative environmental effects of disposal by ocean dumping, incineration, landfill-disposal and other available options.

Summary of hearing

On May 27, 1981, the Subcommittee held hearings to receive testimony on the research needs associated with disposal of sewage sludge. The hearing highlighted the lack of adequate cross-media comparisons of the environmental impacts of sludge disposal. The Committee, in the fiscal year 1982 authorization process, included funding in both the NOAA and EPA budgets for initiation of these cross-media studies, and the two agencies affirmed their commitment to pursue these problems jointly. The hearing also pursued the question of effects of dumping sewage sludge at the current 12-mile site in the New York Bight with potential effects at more offshore sites (60-mile or 106-mile sites).

The complete record of the hearing is produced in Committee on Science and Technology Publication No. 97–24.

3.3(i)—Coordinated Health Information Systems

The Subcommittee joined with the Subcommittee on Science, Research and Technology in hearings on coordinated health information systems, June 2, 3, 4 and July 23, 1981. The background and summary of this hearing are described in the activities of Subcommittee on Science, Research and Technology.

3.3(j)—Impact of Air Pollutants on Agriculture Productivity

Background

The Subcommittee has had a history of involvement in the area of environmental issues related to agriculture. In June 1979 a joint report was issued at the request of the Subcommittee on Conservation and Credit of Committee on Agriculture on the "Agriculture and Environmental Relationships: Issues and Priorities."

A joint hearing involving the same Subcommittee was held on July 25, 1979 and the subject was, "Agriculture Productivity and Environmental Quality." This hearing also produced several facts that warrant further examination.

The objectives of the 1981 hearings were:

1. To examine the status of research and the results, including economic evaluations, on the impact of various pollutants on agriculture productivity.
2. To explore the research needed on the adverse effects on crop productivity caused by air oxidants (ozone), acid deposition (sulfur dioxide and nitrogen oxides), and other pollutants.
3. To explore the status of existing research and of that needed to address related issues under the Clean Air Act.

Summary of hearing

On July 9, 1981 the Natural Resources, Agriculture Research and Environment Subcommittee and the Subcommittee on Department Operations, Research, and Foreign Agriculture Committee on Agriculture held a joint hearing on the impact of air pollutants on agriculture productivity.

The witnesses addressed three points: (1) the history and scope of research into the impact of air pollutants on agriculture productivity, (2) the status of research and that needed on the impact of the following pollutants: (a) air oxidants—ozone and others, these chemicals are the major cause of crop loss due to air pollution, (b) acid deposition—the dry particles and acid rain (acid deposition) contribute to a significant decrease in agricultural productivity in some areas of the USA. It was pointed out that there is some data that indicates that acid deposition is not necessarily harmful to all plants, (c) others—the combined effects of the various pollutants (synergism) has not been extensively studied especially in the field. Widespread research efforts are just beginning, and (3) the data on the extent of the crop loss from both economic and productivity points of view.

One witness testified that ozone concentrations equivalent to the maximum allowed under the Federal Clean Air Act cause $1 billion to $2 billion a year in crop losses.

Another witness concluded that losses due to acid rain are $1 billion a year nationwide. The loss occurs mainly in forests, where sulfuric acid releases aluminum from the soil that kills the fine roots of tree seedlings.

Another study reported on during the hearing indicated that sulfur dioxide, at a level half of what is considered safe for people, can reduce wheat yields by 15 percent.

The hearing provided scientific data that supported the efforts of the Environmental Protection Agency's National Crop Loss Assessment Network.

The full transcript of the hearing can be found in Committee on Science and Technology Publication No. 97-59.

3.3(k)—COMMISSION ON THE FEDERAL DRUG APPROVAL PROCESS

Background

The Committee has maintained active interest in the Federal Drug Approval Process for the past several years. Information developed by the staff of the Subcommittee on Domestic and International Scientific Planning, Analysis and Cooperation (DISPAC) indicated substantial delays existed in the Food and Drug Administration's drug review. On May 9, 1977, Chairman Scheuer requested that the General Accounting Office (GAO) conduct an indepth review of the drug approval process.

While GAO was conducting its review, the Subcommittee held several days of hearings on the FDA Drug Approval Process. These hearings provided additional support for the conclusion that there was a significant "drug lag" in the United States as compared with other technically advanced nations.

On May 8, 1980, GAO provided the Committee with its report entitled, "FDA Drug Approval—A Lengthy Process that Delays the Availability of Important New Drugs" (HRD-80-64). The GAO concluded that the FDA approval process was unnecessarily lengthy and that it often took as long to approve a life-saving drug as to approve drugs of relative unimportance. This lengthy process, in GAO's view, delayed the benefits important drugs could provide the public.

In addition to further hearings, Mr. Scheuer requested GAO to conduct a follow-up investigation of FDA's efforts to reduce the processing time of new drug applications.

Activity

To further FDA's efforts to expedite its mission, Chairman Scheuer, in conjunction with Mr. Gore, Chairman of the Committee's Subcommittee on Investigations and Oversight Subcommittee, convened a Commission of the Federal Drug Approval Process on July 21, 1981. The Commission was composed of 26 distinguished academic, government and private sector experts on drugs and the pharmaceutical industry. The Commission was charged with two primary missions:

1. To make recommendations how the FDA's procedures for approval of new drugs can be expedited without compromising public safety; and
2. to make recommendations on the development of cost effective postmarketing surveillance processes that can guarantee the quick withdrawal from the marketplace of drugs which cause significant adverse effects.

The Commission met formally on a monthly basis convening July 1981 and concluding in April 1982. In addition, four subcommittees of the Commission met several times monthly throughout the tenure of the Commission.

The Commission, in its report to the Committee recommended:

1. The preliminary requirements for approval of new drugs should be studied with the goal of simplifying them consistent with protection of human safety.
2. That the new drug approval process be improved by clarifying the statutory and regulatory standards for establishing substantial evidence of effectiveness of a new drug. The submission in the new drug approval process should be streamlined. The system of new drug development and approval should be modified to afford a more significant role for experts from outside the FDA, drawn from the academic and government biomedical research communities.
3. The FDA should institute management improvements to insure proper tracking of the review process to ensure timeliness.

The Commission Report included a number of additional recommendations to further expedite the drug approval process consistent with protection of public safety.

The Commission report has been printed in Committee on Science and Technology Print No. 97–CC.

3.3(l)—CARBON DIOXIDE AND CLIMATE: THE GREENHOUSE EFFECT

Background

The DOE assumed the lead Federal role in CO_2 research in 1978, and its program has grown steadily ever since. Appropriations for the CO_2 program have increased significantly over the past 3 years. The DOE's budget for CO_2 research increased from the 1980 level of $6.0 million to $10.2 million in 1981. The proposed budget figure for 1982 is $15.3 million, or 72 percent of the $21.5 million in total Federal expenditures on research in this area.

The Subcommittee's concern was that a comprehensive, high-quality research program addressing all major aspects of the CO_2 issue be continued.

Summary of hearing

The Subcommittee, along with the investigations and Oversight Subcommittee, held a joint hearing on July 31, 1981.

The witnesses agreed that the combined effects of fossil fuel burning and deforestation have resulted in an estimated 15 percent increase (from 290 parts per million to 335 ppm) in the level of atmospheric CO_2 over the past 50 years. With this and projected increases in CO_2, there is a potential for significant global warming (the "greenhouse effect"), which could lead to changes in the rainfall and temperature patterns of the U.S. and to permanent changes in the world's climate. These alterations in turn could impact directly on agricultural productivity and water availability and cause flooding of coastal cities and loss of arable lands.

The disagreement was over the length of time before the impact is felt and therefore, the adequacy of the research program. Agency witnesses testimony indicated that the federal program was adequate while research scientists stated that the program was underfunded. One specific recommendation was made by several witnesses was that the DOE CO_2 program should conduct an integrated impact assessment involving physical, biological, and social sciences.

The full transcript has been printed in Committee on Science and Technology Publication No. 97-45.

3.3(m)—DRUG LAG

Background

As noted above, the Subcommittee has maintained an active interest in the Food and Drug Administration's new drug approval process. On May 23, 1980, the General Accounting Office reported to the Subcommittee the results of its three-year study of the drug approval process. This review, which was highly critical of FDA noted a substantial length of time is required to gain the agency's approval of a new drug, far longer than in other technically advanced countries. The GAO identified a number of factors which contributed to the "drug lag" at FDA. In February 1981, Chairman Scheuer requested GAO conduct a follow-up study to measure the progress FDA has been making in speeding up its new drug approval time.

Summary of hearing

On September 16, 1981, the Subcommittee conducted a hearing to assess the progress being made to hasten consideration by FDA of new drugs. The Subcommittee's first witness was Ms. Michelle Gackstetler, accompanied by her physician, Dr. Paul Dyken, Chairman of the Department of Pediatric Neurology at the University of Georgia. Ms. Gackstetler has suffered for the last decade from the degenerative and fatal disease of SSPE. The disease is a measles-like viral encephalitis which affects approximately two hundred children each year in the United States. Ms. Gackstetler and her physician testified that she has been treated successfully with the drug Isoprinosine, an anti-viral agent manufactured by a small California pharmaceutical company. The drug, although approved in 46 countries, including several western European nations, Israel and Canada, is not approved in the United States. Ms. Gackstetler has been permitted to receive treatment under a special compassionate investigational exemption to the Food, Drug and Cosmetic Act.

Mr. Edward Densmore, Deputy Director of the Human Resources Division of the General Accounting Office (GAO) testified that review of FDA's activities since the 1980 report indicates the Agency has made some progress in reducing approval time, particularly for important new drugs. The progress has not been consistent. The GAO study indicated certain divisions of FDA have actually increased the review time and these divisions have responsibility to review the therapeutic advances in the treatment of heart disease and cancer. The GAO report contained additional recommendations to reduce new drug review time. The Subcommittee has also received testimony from Dr. Arthur Hayes, Commissioner of FDA. Dr. Hayes detailed the steps the Administration was taking to revise the regulations relating to new drugs. Dr. Hayes also advised the Subcommittee that FDA was considering the need for new scientific guidelines and for updating existing ones and for changes in the administrative and managerial policies and procedures by which the new drug approval applications are reviewed.

3.3(n)—FIELD HEARING ON ACID PRECIPITATION (LAKE PLACID, N.Y.)

Background

Those who claim that acid precipitation is a demonstrated environmental problem for the U.S. assert that significant damage already has occurred, and that firm evidence shows that far more damage will occur unless regulatory action is taken. Among the alleged effects of acid precipitation are:

—Acidification of lakes, streams, and groundwaters resulting in damage to fish, other acquatic life, and drinking water;

—Reduced forest productivity and damage to agricultural crops;

—Deterioration of man-made materials such as buildings, statuary, finishes and metal structures; and

—Indirect effects on human health arising from contamination of drinking water by metals being released from soils and pipes and from contamination of edible fish by toxic metals, particularly mercury.

The Adirondack region of New York State contains one of the largest lake districts in the eastern United States and is also situated in an area of heavy acid deposition. The lakes of the Adirondacks are particularly susceptible to acidification because of the geology of the region, in which bedrock is dominated by well-weathered metamorphic and igneous rocks. Adirondack waters tend to be poorly buffered and extremely vulnerable to acidification.

At the present time 212 lakes in the Adirondacks do not contain viable fisheries because of acidification. Further, over 27 percent of the surface waters in the region are in the pH range of 5.0–6.0 and may be threatened in the near future.

Summary of hearing

On September 18, 1981, a hearing was held in Lake Placid, New York, to assess the impact of acid rain on one of the most sensitive regions in the United States.

The hearing was organized into two distinct segments. The morning session was an examination of the scientific certainties and uncertainties surrounding the acid rain phenomenon, particularly with regard to the question of long-range transport. Most of the afternoon session centered on a examination of the actual and potential economic and environmental effects of acid rain on the Adirondack region itself.

A complete record of the hearing is available as Committee on Science and Technology Publication No. 97-91.

3.3(o)—ACID RAIN—THE CANADIAN PERSPECTIVE

Background

United States-Canadian relations have been severely strained by the issue of acid rain. The Canadian government argues that since over one-half of the acid deposition over eastern Canada originates in the United States, the United States has an obligation to reduce emissions of the sulfur and nitrogen precursors which ultimately lead to the formation of acid rain. The present U.S. Administration, on the other hand, argues that the scientific uncertainties surrounding the formation, deposition, and effects of acid rain are so large that it is premature to begin bilateral negotiations aimed at reduction of acid rain precursors.

Summary of hearing

On September 19, 1981, Subcommittee Members joined with Canadian parliamentarians in conducting a technical briefing with Canadian scientists on transboundary air pollution. The briefing, held in Lake Placid, New York, was attended by four Canadian parliamentarians (Hon. Ian Watson, Hon. John Fraser, Hon. Derek Blackburn, and Hon. Colin Campbell) and five Members of Congress (Chairman J. Scheuer, Congressman W. Carney, Congressman J. Sensenbrenner, Jr., Congressman D. Martin of New York and Congressman D. Mitchell of New York). The Canadian officials presented an overview of the problem of long-range transboundary air pollution, in addition to specific information on the Canadian experience with aquatic effects, terrestrial effects (forestry), atmospheric transport, and emissions control.

A complete transcript of the briefing is included in Committee on Science and Technology Publication No. 97-91.

3.3(p)—SYNTHETIC FUELS ENVIRONMENTAL RESEARCH AND DEVELOPMENT

Background

The Energy Security Act (Public Law 96-294) established the U.S. Synthetic Fuels Corporation (SFC) to provide financial assistance for the design, construction, and operation of plants to convert coal and oil shale to liquid and gaseous fuels. These plants are required under existing envrionmental laws to meet established pollutant emission standards through the application of control technology.

Despite these requirements, the Subcommittee continued to be concerned that the total environmental threat posed by synfuels plants, especially as it affects human health, may not be averted because some harmful synfuel pollutants may go unregulated. For example, control of sulfur dioxide is specified under the Clean Air Act, but limits are not presently imposed on such chemicals as polycyclic aromatic hydrocarbons. Some of these substances have been identified as potential carcinogens, others as mutagens. Furthermore, human dosage and exposure limits have not been established for constituents in both the product and the process stream. To define these parameters as well as to mitigate the presence of pollutants in the process streams, additional information is required. There are on-going research programs in DOE and EPA to develop this information. The sufficiency and completeness of these activities and available data is unclear. If these programs and the data generated by them are not now sufficiently comprehensive, their inadequacies must be discovered and corrected. Otherwise, the efforts spent on building the synfuels industry could be seriously impeded in the future, awaiting clarification of these health and safety issues.

The Subcommittee, therefore, thought that it was important to review the adequacy and requirements of synfuel environmental R&D programs, both in the private and public sector, in order to make sound decisions on future Federal research budgets.

Summary of hearings

On October 1, 1981, the Subcommittee on Natural Resources, Agriculture Research and Environment joined the Subcommittee on Energy Development and Application to hold a hearing on synthetic fuels environmental R&D. The hearing was jointly chaired by Congressman Fuqua and Scheuer.

The purpose of the hearing was to ascertain the level and adequacy of environment research and development performed by the developing synthetic fuels industry and its use of federal R&D in this area; to determine the level of environmental research and development necessary for the development of environmentally acceptable synthetic fuel processes in a timely manner; and, to examine the scope, participants, and cost of an adequate synthetic fuels environmental research and development program.

The hearing revealed that industry opposed the prospects of further regulations saying that existing requirements are sufficient to ensure development of synfuels plants that are environmentally sound. Industry representatives stated that environmental research done to date was fully adequate to begin commercial operations. Instead, industry expressed a need for Federal assistance in research that would improve the efficiency of commercial synfuel plants. On the other hand, nonindustry witnesses identified numerous pollutants associated with synfuel production that were potentially harmful and were in need of further research and possible regulation. They advocated an expansion of Federal research on these pollutants citing the lack of private sector incentive to undertake this activity.

The full transcript of the hearing can be found in Publication No. 97-65 of the Committee on Science and Technology.

3.3(q)—COORDINATION OF SEVERE STORMS RESEARCH AND SERVICES

Background

Every year, severe storms, be they in the form of hurricanes, tornadoes or heavy thunderstorms, take a large toll in lives and property damage. In the 1970s tornadoes alone accounted for an average of over 100 deaths annually and property loss in the billions of dollars.

Prior hearings of the Committee on Science and Technology have shown that in any given year, there are approximately 100,000 thunderstorms, of which 10,000 are classified as "severe," with damaging winds, large hail, and possible tornadoes. Of these 10,000 severe storms, approximately 1,000—or 10 percent—spawn tornadoes. On the average, 20 of these tornadoes will become the major violent tornadoes that result in death and destruction. The Weather Service, and particularly the Severe Storms Forecast Center in Kansas City, Missouri, has the very important task of trying to determine which of these 100,000 thunderstorms will produce that score of killer tornadoes.

Recent advances in remote sensing technology and in communications show promise of substantially improved detection of severe storms and of more timely and accurate dissemination of warnings to the public. Howver, due to budgetary constraints and lack of coordination of severe storms programs among several Federal agencies, this effort is proceeding slowly.

Several indications that improved meteorological planning is needed are provided in two 1979 Government Accounting Office (GAO) reports. GAO found that the National Oceanic and Atmospheric Administration has no systematic procedure to assure that severe storm research needs are identified from a National Weather Service perspective and met, and that the Federal Coordinator for Meteorological Services does very little coordination in the area of severe storms.

Summary of hearing

On October 6, 1981, a hearing was held to receive testimony on H.R. 3769, the Severe Storms Advisory Act of 1981. The purpose of the hearing was fourfold: to review Federal capabilities, in both the research and operational areas, for detecting severe storms and warning the public of their approach; to assess the degree of cooperation between Federal agencies in these areas and to determine if institutional barriers are slowing progress in the severe storms field; to receive comments of government officials, research scientists, and meteorologists on the bill H.R. 3769; and to determine whether H.R. 3769—or an alternative mechanism—would be useful in enhancing government capabilities in the severe storms area.

3.3(r)—ENVIRONMENTAL PROTECTION AGENCY R&D POSTURE

Background

Over the years, the Science and Technology Committee has carefully monitored the research programs of the Environmental Protection Agency to ensure that they are directed in the best interest of the country and the general public. Traditionally, the Committee holds an EPA posture hearing in each Congress to examine the policies advocated by an Administration with respect to EPA and its research activities. This hearing serves to introduce the Administration's enviromental research policies and provides the fundamental basis of subsequent investigation and oversight activities of environmental research by the Committee.

Summary of hearings

On October 22, 1981, the Subcommittee on Natural Resources, Agriculture Research and Environment held the first EPA R&D posture hearing during the Reagan Administration.

The hearing chaired by Mr. Scheuer revealed a major departure from enivronmental research policies of prior administrations. The principal EPA objectives of the present Administration, as set forth in the hearing, were to eliminate unnecessary regulatory burdens on industry, to improve the operating efficiency of the Agency and reduce wasteful spending, and to enhance the scientific justification and credibility of EPA regulatory decisions. Steps advocated to achieve these goals included postponing and reevaluating regulatory actions, reducing Agency funding and personnel, and imposing an administrative and scientific peer review of EPA research products.

Concern was expressed that such steps could jeopardize the Agency's ability to fulfill its mandated mission. Concern was especially evident over the ramifications of a reduced resource base at a time when the Agency's functional requirements were increasing, the effect of an overly rigorous peer review process on information flow, and the impact of reduced suport for long-term environmental research and control technology development.

The full transcript of the hearing can be found in Publication No. 97-123 of the Committee on Science and Technology.

3.3(s)—DISPOSAL OF HAZARDOUS WASTE

Background

The Subcommittee has become concerned over the increasing threat on our health and the environment posed by the disposal of hazardous waste.

The Federal Government initially responded to the critical hazardous waste problem in 1976 with the enactment of the Resource Conservation and Recovery Act (RCRA). More recently (1980), Congress enacted the Comprehensive Environmental Response, Compensation and Liability Act, better known as "Superfund," to deal with the release of hazardous substances in spills and from inactive and abandoned disposal sites. Successful implementation of both RCRA and the Superfund legislation requires major research and development efforts to assure that the Agency's regulatory and enforcement activities can be adequately carried out. With this in mind, the Office of Research and Development was to embark on an extensive research program to develop technologies to identify and control the disposal or destruction of hazardous wastes.

On October 23, 1981, EPA announced the first 115 of the 400 priority hazardous waste sites targeted for action under Superfund. This $1.6 billion, five-year, Federal cleanup program provides funds from industry and the Federal Government to clean up hazardous waste sites where responsible parties cannot be determined or cannot afford to pay for cleanup.

Under Superfund, states must contribute at least 10 percent of the actual long-term costs of cleanup, per site, unless the site is publicly owned. In the latter situation, the state is required to pay or assure at least 50 percent of the costs.

Summary of hearing

As a result of economic constraints and budgetary cutbacks in the research and development programs at EPA, the Subcommittee has expressed grave concern over the fate of the Superfund and RCRA statutes.

On December 7, 1981 the Subcommittee held a field hearing in the state of Rhode Island which has three of the 115 hazardous waste disposal sites designated by EPA as the worst in the U.S. The purpose of the hearing was to examine the accomplishments and current status of the Superfund legislation and to determine the immediate and future improvements necessary to facilitate its implementation.

The Subcommittee heard from a wide branch of witnesses to examine the appropriateness of Federal, state and industry activities related to the problems of hazardous waste.

The point was made on several occasions that this issue is an interstate matter, often involving illegal or unauthorized dumping across state borders. A need for an information network (educational programs for the public and regulated small business) was expressed by the private sector (industry) and state representatives. In this way, those groups or individuals that don't have the resources of larger companies or do not have the technical expertise may benefit from the most current knowledge available. Dr. Lowrance, in particular, pointed to the use of such networking for environmental health advances. Another point made throughout the day was the need for consistent regulations, especially given the fact that this is an interstate matter.

3.3(t)—State of Scientific Knowledge Concerning Acid Rain

Background

There is a considerable divergence of opinion among scientists on the causes and effects of acid rain. In the area of sources of acid rain, there remains a legitimate question as to the significance of natural sources in the formation of acidic compounds in the atmosphere. The importance of long-range vs. local sources remains a subject of scientific and political importance, as does the relationship between sulfur dioxide, nitrogen oxides, and oxidizing compounds such as ozone in the formation of acid rain. Acid rain has been inpugned in destruction of aquatic habitats, poisoning of drinking water, wear on man-made structures, and stunting of forests and agricultural crops. Some scientists claim that proof exists to verify all of these claims. Others claim that damage to lakes and aquatic life has been sufficiently documented, but that more documentation is needed to verify and assess acid precipitation's effects on soils, vegetation, man-made materials, drinking water, and edible fish. All agree, however, that certain areas in the northeastern U.S. and Southeastern Canada are highly vulnerable to these kinds of damages. These hard-rock areas tend to provide little of the natural buffering materials in their lakes and soils that are found in areas of calcium-bearing rock (e.g., limestone, marble, or dolomite) which can absorb or neutralize acids.

Those asserting that acid precipitation is not a sufficiently documented environmental problem acknowledge the vulnerability of these regions to acidification, but dispute most of the claims of "proven" damage. This is especially true for terrestrial impacts such as those on vegetation and soils, where complex biogeochemical linkages are involved. Only aquatic impacts are acknowledged by some in this group as proven—and even in this case they question whether acid precipitation is the only cause.

Scientific research thus far presents a blurred picture of acid precipitation's impacts. Convincing data does suggest damage to aquatic systems, but data on other impacts is far less conclusive. Important ongoing research aims to clarify the extent of present damage, the tolerance levels of different ecosystems to acidification, and the rate of damage to which these ecosystems are being subjected.

Summary of briefing

On November 19, 1981 the Subcommittee held a technical briefing with a grou of eight experts on the state of scientific knowledge concerning acid rain. The eight scientists, representing both the academic community and the private sector, met all day on November 18 under the auspices of the Subcommittee. At the briefing the following day, they presented the points of consensus and contention which developed during the November 18 session in each of six general areas of investigation: sources, atmospheric processes, deposition, effects, mitigation, and research policy.

A complete transcript of the briefing is included in Committee on Science and Technology Publication No. 97–91.

3.3(u)—ACID RAIN RESEARCH LEGISLATION

Background

Acid rain is one of the pressing—and potentially devastating—environmental problems facing the U.S. The losses of lakes and fish life from increased acidity that is linked to fossil fuel combustion are well documented. Recent information indicates that acid rain may also cause damage to crops, forests, manmade structures, and even human health. Mitigation of the effects of acid rain is proceeding slowly, due to protracted research schedules and to the absence of definitive data upon which to base appropriate emissions controls.

In the 96th Congress, the Chairman of the Committee, Mr. Fuqua, was responsible for the House negotiations with the Senate during the conference on the Energy Security Act of 1980. A specific title X of the Act was therefore deemed to be the jurisdiction of the Committee. The Act established a 10-year program in acid rain research and mandated periodic reporting on research progress by an Interagency Acid Precipitation Task Force. As the pressure for a regulatory solution to acid rain increased in the early 1980s, many began to call for an accelerated program in acid rain research, so that regulatory solutions would be based on the best possible scientific evidence. Two bills designed to accelerate acid rain research were H.R. 4830, the Acid Rain Research Implementation Act of 1981, and H.R. 5055, the Acid Precipitation Accelerated Review and Reporting Act.

Summary of hearing

On December 9, 1981, the Subcommittee held hearings on H.R. 4830 and H.R. 5055.

H.R. 4830 would establish a timetable for periodic reviews of research findings and an accelerated process for integrating those results into action on control programs. H.R. 5055 would provide an accelerated effort to understand the causes and effects of acid rain and to increase research on technologies which control sulfur dioxide and nitrogen oxide emissions.

Hearing witnesses and Members were generally agreed that it is crucial to examine the existing data on acid rain in an expeditious and thorough manner to determine the degree of certainty in the area of acid rain research and to determine the appropriate level of control technology required to limit future damage. Federal agency witnesses, however, stated that the provisions of the Energy Security Act mandated regular reviews of ongoing research, and that additional legislation was not necessary. Witnesses were evenly divided on the necessity for immediate emissions reductions to complement an accelerated research program.

A complete transcript of the hearing is available in Committee on Science and Technology Publication No. 97-91.

3.3(v)—DEPARTMENT OF ENERGY FISCAL YEAR 1983 BUDGET ON ENVIRONMENT, HEALTH AND SAFETY

Background

The Subcommittee has authorized appropriations for the Department of Energy's Environmental Research Program since its establishment.

The Program was established to assure that the environmental research, assessment, and control issues related to current and developing energy technologies are addressed effectively. The Program is divided into two major categories: Health and Environmental Research division and General Science.

The Environmental program has the responsibility for funding, planning, and managing a comprehensive research effort to determine the environmental, health and safety effects of energy technology developments. The information and knowledge acquired from this research program are utilized by the Department and the public to help comprehend fully the potential impacts of energy technology developments and their eventual commercial applications on human health and the environment.

In the General Science area, the Life Sciences program is concerned with exploring fundamental questions associated with normal structure and function of biological systems and how cancer, mutation and other abnormalities of diseases may be caused by energy-related-agents. The research focus of the Nuclear Medicine Applications program, also part of the General Science area, is aimed at enhancing the beneficial application of radiation, radionuclides, and stable isotopes in the diagnosis and treatment of human diseases. Nuclear medicine examinations are important in the diagnosis of abnormalities and diseases of the heart, lung, liver, spleen, kidneys, central nervous system, skeleton, and other organs and tissues within the human body.

Summary of hearing

The authorization of the Department of Energy environmental program for fiscal year 1983 was established by Public Law 97-35. The levels were $198,000,000 for Health and Environmental Research and $58,162,000 for General Life Sciences and Nuclear Medicine Applications. The Administration's requests for these two areas were $134,900,000 and $41,370,000 respectively.

The hearing was scheduled to examine the impact of these proposed budget cuts.

The witnesses indicated that the program changes would not damage the basic research efforts. However, justification for decreasing research efforts in some programs such as cancer, acid rain, CO_2, risk analysis, genetic studies and others were not justified. This was the background utilized by Chairman Fuqua in recommendations to the Appropriations Committee for an increase of $40,000,000 for the DOE FY 1983 budget for Environment, Safety and Health.

3.3(w)—CARBON DIOXIDE AND CLIMATE: THE GREENHOUSE EFFECT

Background

In 1978 a federal carbon dioxide research program was begun and the Department of Energy was designated as the lead agency. The program has been the subject of a number of oversight hearings.

Several recent research efforts have reported data that supports the conclusion that there is, in fact, a significant possibility for global warming. In a NASA study, a prediction was made that the global mean temperature will increase several tenths of a degree Celsius in the 1980's. This increase will be caused by the greenhouse effect. The prediction was based on a calculation of the temperature changes that were determined by simulation models and then comparing the results with existing physical data. The model results were then projected into the eighties. In another study reported by NSF, data was collected that showed that the extent of the pack ice around Antarctica during summers conforms to the dimentions predicted by a theoretical calculation. The calculations were designed to predict the impact of increased levels of CO_2 on the Antarctica ice sheet.

Another development was the November 1981 publication of a study on the Federal Energy R&D Priorities. The study was conducted by the Energy Research Advisory Board and recommended the Climate & CO_2 Research program as the second highest energy research priority. The R&D priorities report concluded that more funding was necessary for the CO_2 research program.

Summary of hearing

On March 25, 1982 the Subcommittee, along with the Subcommittee on Investigations and Oversight, held a hearing with three objectives.

The first objective was to examine the results of recent research into the impact of increasing levels of atmospheric carbon dioxide and the resulting greenhouse effect on the environment; second, to explore the research priorities that are needed to determine the global impact of increased carbon dioxide levels and to provide the information necessary to develop appropriate corrective policy measures; and finally to assess the scope and direction of the Department of Energy's carbon dioxide research program.

At the hearing, a concensus developed among the research scientists that the federal CO_2 program was inadequate. Specifically, they argued that the program was under budgeted and not sufficiently broad in scope.

On the basis of the record developed at this hearing, the full Committee recommended that the Appropriations Committee provide a substantial increase in funding for the CO_2 program.

The transcript of the hearing is printed in Committee on Science and Technology Publication No. 97-115.

3.3(x)—INNOVATIVE TECHNOLOGY IN AGRICULTURE: AQUACULTURE

Background

Ocean catches of seafood have leveled off in recent years at approximately 78 million tons. Many fisheries experts believe that one possible means of increasing future fish harvest is aquaculture, the controlled cultivation and harvest of aquatic plants and animals.

While aquaculture of fish, shellfish, and aquatic plants is largely in the research stage in the United States, aquaculture is a widely practiced and long-established art in tropical Asia. On a worldwide basis, 11.1 billion pounds (5.5 million tons) of aquatic animals were cultured in 1975.

In the United States, on the other hand, only 200 million pounds of seafood are produced annually by aquaculture, which accounts for only 3 percent of the total amount of fish caught or produced. Aquaculture has developed much more slowly in the United States than in Asia for a number of reasons—scientific and technological limitations, political and economic constraints, and higher labor costs. However, the outlook for aquaculture in the United States is improving rapidly enough that significant amounts of capital are starting to flow into aquaculture, particularly in Hawaii.

Aquaculture is one of Hawaii's fastest growing and most promising new industries. In 1976 there were 13 commercial operations, with sales of $178,000. By the end of 1981, there were 40 farms growing prawns, shrimp, catfish, carp, tilapia, oysters, and several other species; sales in 1981 reached $1.7 million—a ten-fold expansion in production in just five years. Aquaculture research, training and technology transfer activities accounted for an additional $3.8 million. Aquaculture commercial production is expected to increase dramatically in 1982, as several large-scale farms begin pilot-demonstration operations. The State Department of Land and Natural Resources, which is responsible for the State Aquaculture Development Program, estimates that more than $20 million of new capital will be invested in aquaculture in Hawaii in the next few years.

Federal sources of aquaculture assistance to Hawaii include the National Science Foundation, Sea Grant (NOAA), Department of Agriculture, Department of Energy, U.S. Agency for International Development, Farmers Home Administration, and the Small Business Administration.

Summary of briefing

On April 12, 1982, the Subcommittee on Natural Resources, Agriculture Research and Environment held a field briefing in Honolulu, Hawaii, on aquaculture research. The objectives of the hearing were to explore the current status of basic scientific knowledge in aquaculture, to explore the research needed to further the development of commercial aquaculture and to examine opportunities for transfer of aquaculture technology and knowledge to the developing world.

The testimony revealed the need for an enhanced Federal role in aquaculture research and development. Major areas of investigation include the following:

—Development of low-energy culture systems. Production costs for non-luxury species must be reduced, either by more effective use of solar or geothermal energy, by appropriate siting decisions, or by use of the "nutrients" contained in waste streams.

—Engineering. There are numerous examples of aquacultural systems which work well in prototype but which are not easily scaled up to production size.

—Basic biological knowledge. Lack of biological information has restricted aquacultural production to only a few species. More information is needed on virtually all aspects of the biology of candidate species, including disease resistance, parasites, feeding behavior, genetics, environmental tolerances, and reproduction.

—Hatchery Techniques. For many species, the greatest impediment to a successful commercial industry is the inability to produce millions of larval or juvenile animals in a reliable manner. Growers are often unable to obtain sufficient "seed" to stock their growing ponds.

—Polyculture. Techniques need to be developed for the culture of more than one commercial species in the same pond (i.e. oysters and finfish).

3.3(y)—BRIEFING ON THE STATUS OF RESEARCH ON THE IMPACT OF PESTICIDES ON HEALTH AND ENVIRONMENT

Background

The Subcommittee has had a history of involvement in the area of environmental issues related to agriculture. In June 1979 a joint report was issued at the request of the Subcommittee on Conservation and Credit of the Committee on Agriculture with this Subcommittee on "Agriculture and Environmental Relationships: Issues and Priorities."

This was followed by a joint hearing involving the same two Subcommittees held on July 25, 1979 and the subject was, "Agricultural Productivity and Environmental Quality." During this hearing, testimony was received that indicated that there were major problems with pest control in modern agriculture.

Despite all the far-reaching benefits, the use of pesticides has brought about grave concern because of the possibility of harmful impact on environmental quality. Conservationists have often targeted pesticide residues as being responsible for a variety of injurious effects, including fishkills, reproductive failures in birds, and acute illnesses in man and animals. Agricultural applications have just as often been charged with being the primary sources from which the chemicals dissipate into the environment. Although acute adverse occurrences have indeed taken place, the sources of the damaging pesticides have been a matter of some dispute. With respect to chronic effects, the true significance of low residue levels of most pesticides in the general environment resulting from long-term use of the chemicals is still not well understood. While these trends are most fully developed in the industrialized nations, the problem is worldwide. In any event, it is widely expected that the use of chemical pesticides will remain an integral part of agricultural technology for many years and will in fact increase at least through the next decade. Consequently, research on the pathways by which pesticides leave the site of application and distribute throughout the environment will continue with the goal of developing appropriate controls.

Hawaii, because of its unique climate in the United States and its active research and development programs, is a leading site of pest control development studies that have direct application to several states and to numerous less developed countries. However, Hawaii also has environmental problems associated with pesticide use.

The most recent and perhaps most serious example of the environmental impact of pesticides is the use of heptachlor to control ants in the pineapple fields. The pesticide, which is banned, except for special use is used to eliminate the transmission of mealybug wilt disease. The disease is devastating to pineapples. Mealybugs suck sap from pineapple plants by using ants as a mode of transportation. Therefore, if the ants are controlled then the spread of wilt is also controlled.

Unfortunately the pesticide, which has a relatively long half-life, has been transmitted through the food chain to the extent that food consumed by humans is contaminated.

Summary of briefing

Based on the unique pesticide issues and at the request of the Congressmen Heftel from Hawaii, a briefing was sxheduled for April 14, 1982.

The recent heptachlor episode of the adverse environmental impact of a pesticide provided an opportunity to review the adequacy of research on current issues. Also, the Hawaii setting provided a unique location in which to review pesticide research that was applicable to the warmer segments of the United States as well as tropical regions in the rest of the World. The University of Hawaii, along with other organizations, has many agriculture research efforts that are carried out jointly with less developed countries. Many of these programs are conducted nowhere else in the United States.

The witnesses indicated that considerably more research needs to be conducted in the basic sciences underlying the life cycles of pests, biological pest control, and the impact of pesticides on health and the environment.

The heptachlor problem was the result of inadequate environmental monitoring, according to most of the witnesses.

3.3(z)—NUTRITION STATUS OF THE UNITED STATES

Background

In 1942, the original enrichment standard for flour was adopted which required the addition of thiamin, niacin, riboflavin and iron to flour. Some thirty years later, the Food Nutrition Board decided to reevaluate existing standards. The conclusions, contained in a 1974 monograph, indicated that there was evidence of potential risk of deficiency for several important nutrients beyond those contained in the original enrichment standards. These additional nutrients include: vitamin A, vitamin B_6, folacin, iron, calcium, magnesium and zinc. On the basis of this finding, the Food Nutrition Board in 1974 issued a proposal for a revised enrichment standard which would include fortification with these additional nutrients.

The Subcommittee's investigation centered on whether the situation regarding nutritional deficiencies has changed in years since the Food Nutrition Board's recommendations were made.

Summary of hearing

On April 29, 1982, the Subcommittee held an oversight hearing to ascertain the current nutritional status of Americans, along with consideration of various methods of enhancing the nutritional quality of food intake. The first witness was Dr. Paul La Chance, Professor of Nutrition Science at Rutgers University. He addressed the need for ameliorative nutrition programs, particularly for the poor and elderly, and discussed the technical feasibility of cereal grain fortification. Dr. Sanford Miller, Director of the Bureau of Foods of the Federal Food and Drug Administration advised the Subcommittee of the agency's position with respect to fortification. Dr. Esther Winterfelt of the Department of Agriculture testified that her agency was of the view that the Food and Nutrition Board's proposal for the fortification of cereal grains needed further scrutiny. Dr. Winterfelt cautioned that particular care must be given to considering the potentially adverse effects on some segments of the population. The Subcommittee also heard from an industry panel consisting of two food company executives who presented the baking industry's view of fortification and discussion of possible regulatory impediments to fortification of the products with the nutrients recommended by the 1974 report. Finally, testimony was received from Dr. James Kirk, Professor of Nutrition at the University of Florida. Dr. Kirk discussed the current nutritional status of the United States as well as the efficacy and feasibility of fortification of cereal grains. Information from this hearing provides useful background for oversight of FDA's efforts to develop an appropriate fortification policy.

3.3(aa)—UNITED NATIONS ENVIRONMENTAL PROGRAM—SESSION OF SPECIAL CHARACTER

Background

The United Nations Environment Program (UNEP), established at U.S. initiative to implement the 1972 Stockholm Action Plan and to serve as an international catalyst for needed actions and improvements, has evolved into an institution with successes in many fields and a capacity to bring about needed environmental actions. However, much remains to be done.

Those problems include the rapid loss of topsoil and the spread of deserts, the disappearance of forests, the earth's shrinking biological diversity, extensive man-created changes in the atmosphere, and the need to sustain a rapidly growing global population.

As members of the United Nations Environment Program gathered in Nairobi, there was, be all accounts, an acknowledged consensus that economic development and care for the environment must go hand in hand.

In Stockholm, heavy emphasis was placed on pollution problems in individual countries. In Nairobi, environmental problems that transcent nation boundaries were expected to draw chief attention.

On theme that was expected to run through the Nairobi meeting was the necessity of creating a "sustainable" basis of economic development. For developing countries, this means poverty cannot be overcome as long as soil and forest are used up to meet the basic needs of food, clothing and shelter for swiftly growing populations.

Summary of conference

Staff from the Subcommittee and full Committee attended the UNEP meeting of May 10-18, 1982 in Nairobi, Kenya.

Several heads of States stated that, given the poverty of much of mankind, vast communities are compelled to live in manner which destroys valuable soils, water resources and vegetative cover. There is no doubt that poverty is a principle sponsoring mechanism of continued and desperate destruction of natural resources.

Another common view was that the conflict at the 1972 Conference in Stockholm between development and environment was fading and nations were seeking the goal of development without destruction.

Western leaders went further by stating it is surely time to face the fact that some of the most urgent and dramatic environmental problems are rooted in one single cause: poverty ". . . Unless we are willing to share the responsibility for tackling poverty, we shall all sooner or later have to pay the penalty and suffer the grave consequences of the destruction of our environment."

Others stressed that things were in many ways worse now than at the time of Stockholm: 6 million hectares of good land turns to desert each year and almost 8 million hectares of rainforest vanishes, said UNEP Executive Director, Mostafa Tolba.

"You have two choices. You either begin in earnest to use these resources rationally and fairly or face an environmental catastrophe as complete and irreversible as any nuclear holocaust," he told the assembled governments.

3.3(bb)—UNITED NATIONS ENVIRONMENTAL PROGRAM PUBLIC HEARING

Background

A United Nations Public Hearing on the state of the human environment in 1982 was held in London on June 15-16, 1982. The hearing objectives were to yield a useful synthesis of informed opinion on environmental issues and actions required to deal with them. The major topics of concern were deforestation, water, and energy.

Deforestation.—If extensive areas of tropical forest are converted to crop land on a sustainable basis, then deforestation might cause species extensions and timber losses; but would also allow food production to be permanently expanded. Some areas, such as parts of the Amazon basin, can be and are being used for modern agriculture with appropriate soil technology. Much tropical forest land, however, is not suitable for raising crops. The environmental effects of deforestation in tropical areas are flooding, increased soil erosion, and decreased water supplies. On a global basis the loss of forest may increase temperatures and could contribute to the greenhouse effect by not removing CO_2 from the atmosphere.

Water.—An adequate supply of water is the most important factor in raising agricultural production in large areas of the world. Presently global water supplies are about 10 times greater than the demand. Projected growth of irrigation and domestic water use would reduce these supplies to about 3.5 times demand by 2000. Irrigation for food production is the major use of water, which accounts for 70 percent of total water use in Africa, 88 percent in Asia, and 60 percent in South America.

Energy.—Rising fuel costs and diminishing supplies of fuelwood are forcing many people in less developed countries either to greatly reduce fuel consumption or to find alternative fuel sources. Among these alternatives are dried dung and crop residues. Because of fuel shortages, increasing numbers of people have only these materials to burn. Yet they are needed to maintain soil productivity, because subsistence farmers can rarely afford commercial fertilizers. When these alternative fuels are burned, energy is gained at the expense of land productivity.

Summary of hearing

Chairman Scheuer was invited to present testimony to the U.N. Public Hearing on a variety of topics, particularly acid rain. Chairman Scheuer discussed the acid rain research effort underway in the U.S. and the political process by which the Congress legislates clean air issues.

The discussion of marine pollution is illustrative of the divergence of opinion expressed at the hearing. Several speakers noted that alarm about pollution of the seas and atmosphere had often been exaggerated and that exercises in forecasting the future were excessively theoretical and unrealistic. This view was supported by the claim that genuine, proven air pollution problems have become less severe in the past 10 years. Since the last general United Nations environment conference in 1972, there has been no evidence that the pollution of the seas has significantly affected fisheries.

On the other hand, other speakers noted that the size and quality of the worldwide fish catch was decreasing. In this view, the seas suffered not only from pollution, but from "mechanical aggression" in which fish were dynamited, rivers were diverted and marine temperatures were raised artifically by coastal industry. These mechanisms may be even more important than pollution in their impact on fish catches.

3.3(cc)—RESEARCH REQUIREMENTS OF THE CLEAN WATER ACT

Background

The Subcommittee has maintained a continuing oversight of the research and development actions at the executive branch relating the water quality. Encompassed in this oversight are the Administration's proposed changes to the Clean Water Act, due for reauthorization in 1982. Of central concern to the Subcommittee is the ability and willingness of the Administration to successfully implement the Act, particularly with respect to the continued reduction and elimination of toxic chemical contamination. The Administration's recent funding reductions in its water pollution research programs serve to heighten this concern. The Subcommittee was also interested in determining whether the Administration planned to abandon the technology-based standards mandated by the Clean Water Act in favor of water quality-based standards.

In order to review the Administration's proposal and the views of the private sector and environmental community, the Subcommittee scheduled hearing to address to address the following areas:

1. the current state of environmental quality of the nation's water supply;
2. the immediate and long-term research needs for successful reduction and elimination of toxic chemical contamination of United States waters; and
3. the scientific feasibility of using water quality-based standards for the control of water pollution.

Summary of hearings

On June 8 and 10, 1982, the Subcommittee, chaired by Mr. Scheuer, held hearings on the research requirement of the Clean Water Act.

Testimony revealed an inadequate and inconsistent data base on the status of this country's water quality. However, witnesses generally urged that a shift, at this time, from technology-based standards to water quality, standards would be inappropriate in view of the lack of understanding of the long-term environmental effects of toxic chemical contaimination on water. The witnesses uniformaly expressed opposition to the administration's budget cuts in research, development and monitoring in support of the Clean Water Act. They further urged that more, not less, research is needed in areas of toxic chemical contamination, non-point sources pollution, and pretreatment studies of municipal wastewater.

A committee publication will be available.

3.3(dd)—OCEAN DUMPING USER FEES

Background

The Marine Protection, Research and Sanctuaries Act, commonly known as the Ocean Dumping Act, was enacted in 1972 as a result of concern over the effects of unregulated dumping in the ocean. The Act established a policy aimed at prohibiting or strictly limiting the ocean dumping of materials harmful to humans or the marine environment.

Titel I of the Act specifies how ocean dumping shall be regulated and directs the EPA and the U.S. Army Corps of Engineers (COE) to establish regulatory programs for ocean dumping. Title II directs NOAA and EPA to conduct research on the effects of and alternatives to ocean dumping.

Current law authorizes the Administrator of EPA and the Secretary of the Army to prescribe processing fees for ocean dumping permits. The Act is silent on assessing fees to recover other costs associated with ocean dumping activities such as site designation, monitoring and research.

Summary of hearing

On June 23, 1982, a joint hearing on ocean dumping user fees was held by the Subcommittee on Natural Resources, Agriculture Research and Environment and the Oceanography Subcommittee of the House Committee on Merchant Marine and Fisheries.

Witnesses testified on two proposals regarding ocean dumping user fees. One would amend H.R. 6113 (a bill to reauthorize Title I of the Ocean Dumping Act) by establishing different categories of fees. The other would amend H.R. 6324 by establishing an Ocean Waste Management Commission.

The establishment of the Commission was proposed as a way to insure that dumpers absorb some of the costs associated with ocean dumping research while at the same time providing them with some input into the scope of the research and the way it is conducted. The structure and duties of the Commission are modelled after the Marine Mammal Commission, (which is charged with overseeing and reporting directly to Congress on the performance of federal agencies that administer programs relating to marine mammals) and is responsible for independently funding projects where it sees gaps in the federal effort.

Several witnesses testified that costs in addition to the permit processing costs should be collected from ocean dumpers. EPA recommended a two-part fee system to first recover permit processing costs and then to recover the costs of research, site designation, maintenance and monitoring. NOAA presented no specific proposals but supported user fees. The NWF called user fees highly desirable and long overdue and stressed that the user fees should revert to the agency to defray the costs on which they were based. The municipalities stated that they recognized the limitations that are placed on the federal government's ability to perform the necessary research and monitoring studies and stated they were willing to share the burden of carrying out these studies.

3.3(ee)—Agriculture Research Needs Over the Next Two Decades

Background

The largest industry in the United States is the agricultural and food industry. The value of farm assets in 1980 was $900 billion and one of every five civilian jobs was in the agricultural and food industry. The success of this large agricultural industry is due in part to the adaptation of technology, which was developed through research. Agricultural research contributes to the basic knowledge essential to the continuing efficient production of food, fiber, and forest resources. However, it appears that presently the problems are growing faster than the solutions that can be provided by scientific research.

Two subcommittees of the Committee on Science and Technology held joint oversight hearings on "Agriculture Research and Development" in 1975. These hearings provided the background and served as a catalyst that led to the incorporation of the competitive grants program in the Department of Agriculture.

Within the past year, three separate reports have stated concerns regarding agriculture research. A 1981 GAO report on long-range planning for agricultural research and development found that, "The U.S. agricultural research and development system does not perform national long-range planning which would meet or satisfy generally accepted definitions of such planning." The study also found that, "Because most planning that is done is not national long-range planning, no rationale for this type of planning has been developed." The report went on to define long-range planning as containing the elements of established goals, selecting strategies for achieving those goals, and setting priorities.

A September 1981 CRS report stated, "The various interactions between Congress, Administrations, college officials, scientists, and the public, affecting agricultural research have been tortuous and complex since its beginning. Basic policies and institutions have changed little in recent years but changing economic and social conditions have altered the scope of the research mission."

OTA completed an assessment of the "United States Food and Agricultural Research System." The report stated, ". . . there is some question as to whether USDA has a national research program or merely a series of local and regional activities. Consequently, USDA and SAES appear to be working on seemingly indistinguishable problems. Many people, including Congress, have voiced concern that little, if any, overall planning and coordination of research exist, especially at top levels of administration. They question whether national issues are receiving adequate attention. Further, there seems to be much duplication and vying for funds."

Summary of hearings

On July 27 and 29, 1982 the Subcommittee held hearings that explored the Nation's agriculture research needs and goals for the next twenty years, examined the current capacity of the agriculture system to meet the long-range needs, and studied the additional research mechanisms that will be needed to fulfill the future research needs.

Testimony revealed that the agricultural research system is a highly decentralized, pluralistic enterprise based on a federal-state "partnership." Several witnesses made the point that federal funding has been declining steadily in comparison to state funding, with a consequent reduction of federal leverage on the system.

One administration witness described the main objectives of science policy to be:

1. the optimal use of resources in both public and private sectors;
2. the concentraton of Federal efforts on long-term, high risk basic research;
3. the selection of projects with highest potential.

He indicated that agricultural research policies did not meet these objectives.

Several witnesses suggested that one basic improvement would be to replace a preoccupation with budgets and administration with closer attention to science. This was supported by the observation that "the agricultural community expends more time, effort, and travel funds on needs identification, priority setting, and budget and program planning than most other areas of science combined, with precious little to show for it."

The conclusion drawn from the hearings was that additional hearings will be necessary before specific suggestions for improvement can be made.

3.3(ff)—PERFORMANCE EVALUATION OF THE ENVIRONMENTAL PROTECTION AGENCY

Background

In the first year of the Reagan Administration, EPA received much public criticism over its environmental policies and its performance or lack thereof. A perception surfaced that EPA was pursuing a course that overly favored industry at the expenses of safeguarding public health and the environment, the mandated mission of the Agency. Private meetings with industry groups, reduced enforcement actions, cuts in personnel and funding, increased delegation of programs to the States with corresponding reductions in State funding, and controversial regulatory decisions were among the incidents giving rise to concern over the Agency's effectivess and motives.

In response to this situation, the committees of the House having jurisdiction decided to examine collectively the Agency's year-to-date performance and its motivation and effectiveness.

Summary of hearings

On July 21 and 22, 1982, the Subcommittee on Natural Resources, Agriculture Research and Environment joined the Subcommittee on Investigations and Oversight of the Committee on Science and Technology, the Subcommittee on Health and the Environment of the Committee on Energy and Commerce, and the Subcommittee on Environment, Energy and Natual Resources of the Committee on Government Operations to hold hearings on the performance of the Environmental Protection Agency. The hearings were co-chaired by Mr. Scheuer, Mr. Waxman, Mr. Moffett, and Mr. Gore.

Witnesses gave mixed reviews about the performance of EPA under the Reagan Administration. Industry praised EPA's regulatory reform actions and responsiveness to industry concerns saying that this course supports economic recovery and more appropriate environmental regulations. Environmental representatives countered that the Administration's policies and actions subvert the intent of existing environmental laws and make it less likely that EPA will be able to respond appropriately to emerging environmental problems. They argued that by following this path, the health and welfare of the environment and the citizens of the country will be further degraded by environmental pollution. State representatives expressed fears that they will be unable to assume greater responsibility for environmental protection due to a lack of adequate State resources and sufficient Federal funding support. The Administration held the position that its policies and actions meet both objectives of protecting the environment and promoting economic growth.

With respect to EPA research, which falls under the jurisdiction of the Science and Technology Committee, an especially acute situation was revealed. Since the Reagan Administration took office, EPA research funding had been cut in real dollar terms by 50% and research personnel had been reduced by 30%. Moreover, no Assistant Administrator for the Office of Research and Development had been appointed and no credible plan had been developed for the Agency's research program. As for improving research quality, the Agency had initiated a peer review process that was viewed as administrative in nature and stifling information flow. Members express concern that these actions could erode the information base upon which implementation of environmental laws and sound environmental policy decisionmaking depends.

3.3(gg)—DEFORESTATION: ENVIRONMENTAL IMPACT AND RESEARCH NEEDS

Background

Tropical rain forests are disappearing at an alarming rate as the world's increasing population clears and converts forest lands in an effort to grow more food, to cut wood for fuel, and to harvest trees for industrial raw material.

On a global basis, the stability of the climate may be disrupted by deforestation. In a July 31, 1981 hearing on Carbon Dioxide and Climate, by the Natural Resources, Agriculture Research and Environment Subcommittee, the link between deforestation and the increase in atmospheric concentrations of carbon dioxide was clearly established. A followup hearing, held on March 25, 1982, indicated that two major factors are involved in the contribution to atmospheric carbon dioxide.

Summary of hearing

The Subcommittee, along with the Subcommittee on Human Rights and International Organizations of the Committee on Foreign Affairs, held a hearing on September 16, 1982.

Testimony indicated that in the United States the tropical forests represent less than one percent of the world's total. Even though deforestation occurs primarily in developing countries, developed countries are not escaping the adverse effects. For example, the pharmaceutical industry depends to a large degree on tropical plants as a source of ingredients. One-fourth to one-half of the prescriptions in the United States contain ingredients from tropical plants. However, it was estimated that tropical forest depletion has resulted in the loss of from two to five million of the world's species. Thus, both the current supply and the future drug potential is seriously jeopardized.

Another ramification of the loss of species is found in the area of agriculture productivity. American agriculture needs frequent infusions of genetic material from tropical plants in order to meet increasing demands in productivity, pest resistance, and drought resistance. As species are lost the needed genetic diversity is also lost.

The information developed during this hearing will be useful in reviewing future research proposals in the area of deforestation and loss of species.

A Committee publication will be available.

3.3(hh)—REYE'S SYNDROME

Background

Reye's Syndrome is a rare disease which occurs in children following episodes of flu, chicken pox and other viruses. The disease, which is fatal in twenty-two percent of the cases, affects the liver and the brain.

On June 4, 1982, the Department of Health and Human Services issued a statement that warned of the potential link between aspirin use in children and Reye's Syndrome. The Department statement was based in large measure on an Ohio study involving some

64 patients. The purported conclusion of this study is that salicylate (the active ingredient in aspirin) acts in synergy with the antecedent illness and results in the appearance of Reye's Syndrome. Although HHS acknowledged the study may not be totally dispositive of the issue, the agency determined it was sound enough to give statistical significance to the claim that the use of aspirin to treat fever from flu and chicken pox increases the risk of Reye's Syndrome.

Staff investigation of the implications of the proposed agency action of requiring a warning label on aspirin containers revealed a number of areas of concern relating to the validity of the Ohio data and the effect that the regulatory action will have on further research in this disease.

Summary of hearings

On September 17 and 29, 1982 the Subcommittee held hearings on Reye's Syndrome and Aspirin use. At the hearing on September 17, the Subcommittee received testimony from Dr. George Johnson, the discoverer of Reye's Syndrome, who discussed the diseases's history and characteristics. Dr. Heinz Eichenwald, Professor of Pediatrics at the University of Texas Health Science Center in Dallas, testified as to the pediatric community's concern with the alleged link between aspirin and Reye's. Dr. John Crocker, Professor of Epidemiology at Dalhousie University, Halifax, Canada discussed the potential environmental causes of the disease. Dr. Crocker noted a synergy exists between the emulsifer used in several insecticides and the antecedent illnesses to Reye's Syndrome. Dr. Robert Klein of the Dartmouth-Hitchcock Arthritis Center, Hanover, New Hampshire, testified as to the low incidence of Reye's among juvenile arthritics who are continuously on aspirin. Dr. Klein also discussed some of the potential difficulties that might arise if the proposed regulatory actions were taken. Dr. Reule Stallones, Dean of the School of Public Health, University of Texas at Houston testified that available evidence clearly supported the conclusion that a causal link existed between the use of salicylates and the occurrence of Reye's Syndrome. Dr. Stallones urged that physicians and parents should be made aware of the potential hazard. Mr. Paul Hinson, Executive Director of the National Reye's Syndrome Association presented testimony on the importance of additional research into the causes and treatment of Reye's Syndrome and need to develop programs to foster early recognition of the disease. Dr. Frank Hurley, Vice President of Biometric Research Institute of Arlington, discussed his firm's audit of the Ohio study. The conclusion drawn from this audit was that the Ohio study did not provide sound statistical evidence that the use of salicylates increases the risk of Reye's Syndrome.

At the second day of hearings, the Subcommittee received testimony from Dr. Edward Brandt, Assistant Secretary for Health of the Department of Health and Human Services. Although Dr. Brandt acknowledged that available data did not establish beyond a doubt the cause-and-effect relationship between salicylates and Reyes', the collective results of several studies establish a strong association. Consequently, Dr. Brandt testified, of salicylate products. The Subcommittee also received testimony from Dr. James P.

Orlowski, Assistant Director of the Pediatrics Intensive Care Unit, Cleveland Clinic. Dr. Orlowski, a participant in the Ohio study, testified that he had submitted several Reye's cases to the investigators of this study. These cases did not conform to the conclusions drawn by that study and were not included in the final figures. Dr. Orlowski's testimony raised the question of possible selection bias.

The Subcommittee's hearing raised serious questions concerning the data base upon which the Department of Health and Human Services was acting. On November —, 1982 the Department withdrew its proposal to require warning labels on aspirin and other salicylates.

A Committee publication will be available.

3.3(ii)—APPROPRIATE TECHNOLOGY: RESEARCH IN ALTERNATIVE AGRICULTURE SYSTEMS

Background

Food shortages in many locations of the world as well as the impending threat of insufficient supplies for other areas, are stimulating more agricultural research directed toward alternative technologies for increasing food supplies. Some of these alternative technologies were examined in hearings held in July 1978 by the Subcommittee on Domestic and International Scientific Planning, Analysis and Cooperation of the Science and Technology Committee.

Summary of hearing

The Subcommittee held a hearing on September 30, 1982 to examine the research needed to extend and to apply information regarding appropriate and alternative agriculture systems both in the United States and in developing countries. The hearing focused on the scope, direction, and level of the United States efforts directed toward international programs of alternative and innovative agriculture systems.

Witnesses testified that in spite of all the world-wide efforts of the past decade to increase food production, little increase in per capita food production has occurred in the developing countries. To resolve the problems AID has projects in improving crop varieties, and seed technology.

As a result, it is likely that some areas of the humid tropics could make a major contribution to increasing world food production in the next decades.

3.3(jj)—THE SCIENTIFIC BASIS OF EPA'S REGULATIONS FOR LAND DISPOSAL OF HAZARDOUS WASTES

Background

On January 26, 1982 the Environmental Protection Agency issued their Interim Final Regulations For Land Disposal of Hazardous Wastes. These regulations focus on groundwater protection by requiring owners and operators of hazardous waste land disposal facilities to install equipment such as liners and leachate collection systems and, if contamination occurs, take correction action to cleanup the groundwater.

Staff investigation of EPA's groundwater protection strategy, however, revealed that since liners eventually leak, an effective groundwater monitoring and response is essential if the long-term protection of public health and environment is to be ensured. Compounding this concern is the fact that EPA's post-closure care and maintenance requirements at hazardous waste land disposal facilities expires after thirty years. Clean-up of groundwater contamination after this period will be the responsibility of the public, not the owners and operators of the facilities.

Summary of hearings

On November 30, December 8 and December 16, 1982 the Subcommittee on Natural Resources, Agriculture Research and Environment, convened hearings on EPA's regulations for land disposal of hazardous wastes.

Almost without exception, the witnesses expressed serious doubts over the degree of long-term protection these regulations provide and the need to reduce our dependence on landfilling of hazardous wastes. The utilization of alternative treatment technologies such as incineration and detoxification was emphasized as a method in which to reduce dependence on land disposal. Certain industrial and environmental groups argued, however, that these regulations do not provide adequate incentives for the construction of alternative treatment technologies, and will, therefore, result in contamination of public health and environment.

The initiatives of the State of California in banning highly toxic and persistent hazardous wastes from land disposal were generally supported by the witnesses.

3.3(kk)—STUDY TRIP TO PEOPLE'S REPUBLIC OF CHINA

Background

Relations in science and technology figured prominently in the process of U.S.-China normalization and came to symbolize improving Sino-American relations in the post-normalization period. Government-to-government relations in science and technology have expanded rapidly since January 1979 and now are being conducted under the terms of the Agreement Between the Government of the People's Republic of China on Cooperation in Science and Technology and 17 agency-to-agency protocols or understandings. In many areas substantive scientific collaboration has already occurred. In others careful plans for cooperation have been made, and the stage is now set for substantive work. Due to the political commitments to it from both governments and the growth of genuine rapport between scientists in the two countries, in most respects the program of S&T cooperation has been remarkably successful to date.

For the Chinese side the relationship in S&T is seen as an important part of the developing political relationship as well as an opportunity to upgrade its science and technology. Access to the U.S., therefore, provides not just access to industrial technology, but also to the technology of research itself, or how one "does science" in the advanced industrial world.

The government-to-government Science and Technology Agreement opened the door for scores of private and business institutions in the U.S. to develop their own cooperative programs with Chinese institutions. An average of 140 Chinese commercial, technical, and cultural delegations per month visited the U.S. in 1980, compared with two delegations per month before normalization. In the spring of 1980, the first U.S. Government ship to call at a Chinese port in more than 30 years conducted important oceanographic experiments. Under the earthquake protocol the U.S. has benefited from access to Chinese records and predictive techniques. The Chinese also are cooperating with the U.S. on a worldwide study of the dynamics of the Earth's crust and giving access to previously denied information on the world's climate. Cooperative ventures in medicine and public health already have gained the U.S. new knowledge in such areas as cancer and treatment of burns. Under hydropower protocols the U.S. could gain significant commercial benefits from cooperating with China, which has the world's largest hydroelectric potential.

Activities

On September 29, 1982, Mr. Chai Zemin, Chinese Ambassador to Washington, invited Congressman Scheuer to lead a delegation of Congressmen and technical experts from U.S. government agencies for a two-week visit to China. The study trip, which took place in November, 1982, included visits to Beijing, Shanghai, Guangzhou, Qiandao, and Hong Kong.

The agenda for the visit was evenly divided between technical issues and policy issues. On the policy side, the delegation met with Mr. Fang Yi, State Counselor of the Chinese Science and Technology Commission, to discuss development of science policy in the two countries, the relation of Chinese and U.S. goals in science and technology to broader national goals, and the cooperative agreements in science and technology, including controversial areas such as export controls. Site visits, policy discussions, or both were conducted with the following organizations: Ministry of Rural and Urban Construction and Environmental Protection, State Meteorological Bureau, State Committee on Population Control and Family Planning, State Oceanography Bureau, Ministry of Agriculture, Ministry of Forestry, Chinese Academy of Sciences, Ministry of Public Health, Evergreen People's Commune, Shanghai Science and Technology Commission, Xiandao Institute of Oceanology, Pearl River Resource Fisheries Institute, South China Sea Institute of Oceanography.

The delegation discussed the transfer of agricultural germ plasm (soybeans and swine) to U.S. scientists. Such exchanges may ultimately prove to have large benefits for U.S. farmers.

On December 8, 1982, a memorandum of understanding was signed by representatives of the People's Republic of China and the United States setting forth a timetable for exchange of agricultural germ plasm.

A full report on the study trip is on file with the Committee.

3.4—SUBCOMMITTEE ON ENERGY RESEARCH AND PRODUCTION

3.4(a)—BUDGET REVIEW

In addition to oversight hearings, site visits, reports, and special projects, the Subcommittee employs as one of its major oversight tools the annual authorization hearings on the Budget Request to Congress for the Department of Energy (DOE) Civilian Research, Development and Demonstration programs. In the First Session of the 97th Congress, these hearings culminated in authorization legislation reported from the Committee: H.R. 3146 and H.R. 3447. Subsequent to actions on these bills, the Committee was instructed to make its authorization recommendations in the Omnibus Reconciliation Act of 1981, pursuant to directions contained in the first concurrent resolution on the budget for the fiscal year 1982 (H. Con. Res. 115, 97th Congress). Provisions of H.R. 3146 and H.R. 3447 were submitted by the Committee for incorporation into the Omnibus Reconciliation bill. However, an amendment offered by Congressmen Gramm and Latta to the Reconciliation bill passed the House and provided Fiscal Year 1982 funding levels for DOE Civilian R&D programs which were different for several program areas from those contained in the Committee bills. The amended Reconciliation bill was enacted into law on August 13, 1981. Title X, Subtitle A of the Omnibus Reconciliation Act of 1981 (Public Law 97-35) provides authorization for the DOE Civilian R&D programs for fiscal years 1982, 1983 and 1984.

Since an annual authorization was not required for Fiscal Year 1983, the Subcommittee conducted "budget review hearings" during the Second Session of the 97th Congress to review the budget requests for an program status of those DOE Civilian R&D programs and projects over which the Subcommittee has jurisdiction. These programs include Nuclear Fission R&D, Magnetic Fusion Energy, Uranium Enrichment Activities, Electric Energy Systems, Energy Storage Systems, Small-Scale Hydropower, Departmental Administration, and certain Supporting Research activities. Subcommittee budget review hearings on the aforementioned programs were held in the Second Session of the 97th Congress on March 9, 10, 16, 17, 23, 24, 25, 30, 31, and May 20, 1982.

In addition to this extensive review, the Full Committee Chairman appeared before the Committee on Appropriations on April 1 and May 13, 1982, to present detailed recommendations from the authorizing Science and Technology Committee regarding funding levels and program policy directions for the Civilian R&D programs of the Department of Energy for Fiscal Year 1983.

3.4(b)—NUCLEAR WASTE MANAGEMENT

On February 8, 1981, Mr. Goldwater, Mr. Fuqua, Mrs. Bouquard, and Mr. Lujan introduced H.R. 1909, entitled "Nuclear Waste Research, Developent, and Demonstration Act of 1981." H.R. 1909 was a successor bill to H.R. 7418 from the 96th Congress. H.R. 1909 called for a focused technology demonstration program in a high-level nuclear waste management. At least two waste disposal demonstration facilities would be constructed in different geological media under this bill. H.R. 1909 was intended to be more specific than the general waste R&D program last authorized by the Committee in the "Omnibus Reconciliation Act of 1981" (Public Law 97-35). Hearings on H.R. 1909 were held by the Subcommittee on Energy Research and Production on February 26, March 19, and June 17 and 18, 1981. Subcommittee markups were held on July 15 and 16, 1981, and the bill was reported, as amended to the full Committee on July 16, 1981. The Full Committee did not take action on H.R. 1909 but considered instead a new compromise bill that was introduced on November 18, 1981, H.R. 5016. H.R. 5016 was sponsored by Mrs. Bouquard and 19 co-sponsors on the Committee. On November 20, 1981, the Committee met to markup H.R. 5016. On that date, the Committee reported H.R. 5016 with amendments by a vote of 37 yeas to 2 nays. Essentially, the final waste management bill reported by the Committee established the federal policy with respect to disposal of high-level radioactive wastes from civilian nuclear activities and provided for the construction, operation and maintenance of the R&D facilities and permanent disposal facilities. It also included a research and development program on spent nuclear fuel storage.

3.4(c)—H.R. 5016, THE HIGH-LEVEL RADIOACTIVE WASTE MANAGEMENT AND POLICY ACT

To establish a federal policy with respect to the disposal of high level radioactive waste from civilian nuclear activities, to provide for the construction, operation, and maintenance of waste disposal facilities, to provide for a program of nuclear waste and spent fuel research and development, and for other purposes.

Summary and background of legislation

H.R. 5016 authorizes the Secretary of Energy to provide for the construction, operation and maintenance of permanent, deep geological disposal facilities for high-level radioactive waste and spent fuel, called repositories. The bill would integrate the existing research, development and demonstration program conducted by the Secretary of Energy into a program focused on supporting a repository program, principally through a test and evaluation (T&E) facility. The Secretary is given contracting authority to collect a fee in advance from the generators of nuclear waste to cover the program costs. H.R. 5016 mandates a cooperative role between the federal government and the states, localities and Indian tribes in the siting of repositories. The Secretary is authorized to fund the states and Indian tribes relative to their interactions with the Secretary. H.R. 5016 also contains a research, development and demonstration program on the dry storage of spent fuel at up to three powerplants. The Secretary may also conduct a technology demonstration activity on dry storage at a federal facility using up to 300 metric tons of spent fuel.

Although a repository would be a first-of-a-kind facility, more in the nature of a research and development project than a commercial project, the Committee narrowed the scope of its jurisdiction to matters which were clearly identifiable as research, development and technology demonstration.

The remainder of this summary, therefore, deals with the research and development provisions of H.R. 5016 which were subsequently incorporated in H.R. 3809. (See legislative history section.)

The bill requires the Secretary to prepare a mission plan for all the authorized activities under the Act so that a well-defined and cost-effective program can be undertaken and evaluated. The mission plan would lay out a schedule for obtaining all of the necessary information to make decisions concerning the siting and construction of repositories and test and evaluation facilities.

The bill specifies a National Environmental Policy Act (NEPA) road map which does not abrogate the requirements of existing law but carefully defines those environmental reports which are required at any particular point. The intention of this approach was to allow the agencies involved to conduct their activities in accordance with the law and the will of Congress but without the threat of dilatory lawsuits. Generally, the government's responsibility for the preparation of NEPA statements relative to the repository and the T&E facility would be satisfied by the Department of Energy. Other agencies preparing NEPA statements would be required to minimize duplication of effort in the preparation of such statements.

Within six months after passage of the Act, the Secretary is authorized to promulgate guidelines for the selection of sites for the T&E facility and for repositories.

Within one year after passage of the Act, the Secretary is authorized to identify at least three sites suitable for beginning the siting research process. Within six months afterwards the Secretary is required to hold a public meeting and to prepare the necessary NEPA statements.

The Secretary would then have three years to complete the siting research program and to develop the necessary data to prepare other NEPA statements and to make siting decisions. During this three-year period the Secretary could begin preconstruction activities on the T&E facility at the most promising site. However, no on-site T&E facility construction would be permitted until a decision is made on the selection of a site for the initial repository so as not to compromise the decision on the initial repository.

Beginning on the date when the sites are identified and throughout the life of the T&E facility, the states and tribes are entitled to participate in a process of "consultation and cooperation."

The Secretary is required to prepare a project decision schedule that delineates the optimum way to obtain the operation of the repository and T&E facility within the time limits specified in the Act. All government agencies are required to comply with the deadlines and decision schedule unless they submit a written report to Congress explaining why they cannot meet such deadlines.

The bill specifies eight purposes for the T&E facility which include a supplemental of the siting research process, integration of components into a system, settling licensing issues or questions, validating scientific models, defining and confirming engineering parameters and establishing operational capability at low radiation exposures. The T&E facility must be designed to receive from 40 to 300 canisters of solidified waste, or spent fuel if the waste is not available. On-site T&E facility construction would begin within five years and four months after passage of the Act but only after the final decision is made on the initial repository site by the President and the Congress. On-site construction of the T&E facility is scheduled to take two years.

The T&E facility may be scaled up to a permanent repository only if the Nuclear Regulatory Commission (Commission) authorizes such scale-up pursuant to the Act. The T&E facility operation is to terminate within five years after operation of the initial repository or sooner if the R&D is no longer necessary.

If the T&E facility is co-located with a repository, the Secretary is required to obtain the Commission's concurrence that the planned activities at the T&E facility won't compromise the site for a repository, and that the Secretary's actions in decontaminating and decommissioning the T&E facility are sufficient.

The Secretary and the Commission are directed to enter into a memorandum of understanding establishing the arrangements for review, consultation and coordination. No shafts for the T&E facility may be excavated until such understanding is reached. The Secretary is required to cease any activities and remove radioactive material if the site is determined unsuitable for a repository unless the Secretary, with the concurrence of the Commission, finds that public health and safety will not be endangered by such R&D activities. The Commission is to conduct an analysis of the adequacy of the attention to public health and safety considerations by the Secretary. Reports may be submitted to the President, the Secretary and the Congress on any such analyses.

The Secretary is required to establish a demonstration program for the dry storage of spent fuel at nuclear powerplants. Utilities desiring to participate in this program would enter into agreements with the Secretary. The Secretary would provide consultative and technical assistance and generic R&D, including an R&D program on dry storage at existing federal facilities with a maximum capacity of 300 metric tons of spent fuel. The Secretary's total contribution to the program should not exceed 25 percent of the overall cost. The remaining costs are to be borne by the utility or covered by the waste fund created under the Act.

Subsequent to the Secretary and the state or tribe reaching agreement on state or tribe participation, the Secretary would pay 75 percent of the eligible state and tribe expenses up to $3 million per year from the date upon which a site is identified to the date that a site is selected by the Secretary. After a site is selected, the Secretary is required to pay $10 million per year to the state or tribe where the site is located until a repository has reached capacity and is ready for decommissioning.

The Secretary is authorized to collect fees from the persons generating waste by entering into contracts with such persons. The Nuclear Regulatory Commission is precluded from issuing any licenses to any person that does not have such a contract with the Secretary. Funds received by the Secretary must be deposited into the Treasury in a nuclear waste fund to be used exclusively for nuclear waste activities.

Legislative history

H.R. 5016 evolved from a series of legislative initiatives of the Members of the Committee on Science and Technology during the 96th and 97th Congresses. These initiatives included H.R. 7418, the "Nuclear Waste Research Development and Demonstration Act of 1980"; H.R. 6627 and H.R. 7449, the fiscal year 1981 DOE Authorization Bills; H.R. 4019, the "Nuclear Waste Management Research, Development and Demonstration Act of 1979"; H.R. 1852, a related bill with the same title as H.R. 4019; H.R. 4818, the "Nuclear Waste Terminal Storage and Technology Demonstration Act of 1979"; H.R. 1909, the "Nuclear Waste Research, Development, and Demonstration Act of 1981"; and various other bills on the same subject.

The Subcommittee on Energy Research and Production held hearings on H.R. 1909 on February 26, March 19, and June 17 and 18, 1981. Subcommittee markups were held on July 15 and 16, 1981, and the bill was reported, as amended, to the full Committee on July 16, 1981.

On November 18, 1981, after discussions and negotiations on the provisions of the bill, Mrs. Bouquard, together with Mr. Fuqua and 18 co-sponsors from the Committee, introduced a new bill, H.R. 5016, the compromise legislation. The bill was jointly referred to the Committees on Energy and Commerce, Interior and Insular Affairs, Rules, and Science and Technology. On November 20, 1981, the Committee met to consider H.R. 5016 and reported the bill with amendments by a recorded vote of 37 yeas to 2 nays.

The two legislative committees with substantive jurisdiction over nuclear waste regulation also reported separate pieces of legislation. H.R. 3809 was reported by the Interior Committee and H.R. 6598 was reported by the Energy and Commerce Committee. The Chairmen of the three committees involved met and agreed upon a unified nuclear waste bill incorporating the Committee on Science and Technology's R&D provisions as title II, with regulatory matters in title I, and shared jurisdictional matters in title III. The Rules Committee agreed to a rule which would make in order this unified bill, H.R. 7187, as an amendment to H.R. 3809, the bill reported by the Committee on Interior and Insular Affairs. The House considered and approved this rule on September 30, 1982. On the same day, the House also began general debate on H.R. 3809 and agreed to a number of technical amendments.

The House continued consideration of the bill on November 29, 30, and December 2, 1982. H.R. 3809 passed the House, with amendments, by voice vote on December 2, 1982.

H.R. 3809 was placed on the Senate calendar on December 6, 1982. It passed the Senate, with amendments, on December 20, 1982. The House, by a vote of 256 yeas to 32 nays voted to accept the Senate amendments on December 20, 1982, when it voted on the rule, H. Res. 636. H.R. 3809 was signed into law on December —, 1982, Public Law No. 97——.

3.4(d)—CLINCH RIVER BREEDER REACTOR (CRBR) PROJECT

The Subcommittee on Energy Research and Production held hearings on March 1 and 7, 1981 on the FY 1982 Department of Energy budget submission for the CRBRP and the Proposed Large Development Plant (LDP) within the budget request for the Nuclear Fission R&D program. During Full Committee markup on H.R. 3146, the FY 1982 DOE Authorization bill, the Committee voted to terminate authorization of the Clinch River Breeder Reactor (CRBR) Project. A hearing was then held on May 11, 1981 on the subject of close-out costs for the project. Testimony was presented by representatives from the Department of Energy, Edison Electric Institute, the Breeder Reactor Corporation and the General Accounting Office. As of September 30, 1981, the Department estimated closing costs would amount to between $248.2 million and $422 million depending on how the termination was carried out. Questions on the extent of the Government's liability to the 753 utilities who had invested in the project was also a point of contention. Members discussed options for reducing closing costs and several documents related to the subject were incorporated into the hearing record.

Authorization for the CRBR was restored by the Gramm-Latta Amendment to the Omnibus Reconciliation Act of 1981, Public Law 97-35, which authorized DOE R&D programs for fiscal years 1982, 1983 and 1984.

The Subcommittee hearings on the FY 1983 budget submission for nuclear fission programs, including the Clinch River Project, were held on March 9-10, 1982. The Subcommittee Chairman requested that the testimony be limited to the broad budget issues associated with the overall nuclear fission research program, although the CRBR was discussed within the framework of these budgetary issues. Testimony was received from the Department of Energy witnesses, industry representatives and the U.S. Nuclear Regulatory Commission. The Clinch River Project was discussed within the context of its relative economic merits, safety and its importance to the continued evolution and health of the U.S. nuclear power industry. Questions related to the project's fuel cycle were also addressed, with specific attention given to the possible sources of the CRBR plutonium. Additional testimony was received from the U.S. Nuclear Regulatory Commission in order to present a description of their activities related to the fast breeder reactor safety and licensing issues. Their remarks centered primarily on issues related to the Clinch River Breeder Reactor Project and the production of a site suitability analysis as well as an assessment of the Environmental Impact Statement.

The Subcommittee staff also held detailed reviews of specific areas of concern associated with the CRBR Project, such as the prototype steam generator test plan, safety R&D and fuel element testing. Reviews of the overall project management plan and budgets were held with key DOE project personnel. These reviews took place both in Washington and at the respective field locations (Oak Ridge, Argonne-East at Hanford, Washington, and the Energy Technology Engineering Center) where pertinent project activities are in progress.

At the Subcommittee Chairman's request, the General Accounting Office (GAO) initiated several analyses related to the Clinch River Project. These included a re-evaluation of the GAO earlier work on the relevance of the project, a re-appraisal of the CRBR cost estimate and a general review of the LMFBR technology base program and its contribution to the plant demonstration project in the context of the overall breeder systems program. Subsequently, the GAO published its findings on its re-evaluation of the project's pace and timing, concluding that a CRBR-type project still remains an essential part of the nation's breeder development program.

The Subcommittee staff prepared a fact book on the CRBR Project that deals with several issues that have been raised in opposition to completion of the project on schedule. The book was provided to Members and legislative aides who expressed interest in receiving additional information on the Project.

3.4(e)—ADVANCED NUCLEAR SYSTEMS

As part of the Subcommittee oversight on the Department of Energy's FY 1983 budget submission, hearings were held on March 17, 1982 on the Department's plan for its Advanced Nuclear Systems program. This activity includes the provision of radio isotope thermal generators for NASA's Galileo mission as well as the development of space power reactors suitable for advanced missions requiring high power, reliability and longer life. The specific project presently serving as the focus for the latter work is the performance of the necessary base R&D to produce a nuclear reactor capable of a 100 KWe output—the so-called SP-100 project.

The hearing centered on efforts being made by the DOE to acquire cooperative funding support from user agencies such as NASA and the Department of Defense. Testimony was received from the DOE and NASA as to their respective interests and the interests of DARPA in supporting the development of the SP-100 technology. Subsequent to these hearings, the Subcommittee has worked closely with all the prospective participants in the SP-100 activity in an oversight capacity.

Committee Publication Number 97-113.

3.4(f)—LIGHT WATER REACTOR (LWR) SYSTEMS

The Subcommittee held hearings on the three DOE subprograms in this program area on March 16 and 17, 1982: (1) The requested 98-percent reduction in the LWR safety technology budget (to a total of $1 million) was questioned in light of the large total annual U.S. budget (more than $200 million) for nuclear safety R&D and the lack of responsiveness of the subprogram to the explicit mandates of PL 96-567 (The Nuclear Safety Research, Development and Demonstration Act of 1980). (2) Concern was expressed about the potential anti-competitive impact of funding continued LWR extended burnup R&D for only one nuclear fuel supplier. The wisdom of reducing funding in such a high-payoff area was also questioned. (3) The LWR radiation dose reduction subprogram was cited as worthy of continued funding as a component of the LWR safety technology subprogram.

3.4(g)—FUEL CYCLE R&D: REPROCESSING

As part of oversight activities on the DOE Fuel Cycle R&D program, staff visited the Barnwell Nuclear Fuel Reprocessing Plant in South Carolina for the express purpose of reviewing plant design. Aspects of the Barnwell issue include technical arguments regarding the "remote maintenance" concept and "limited contact maintenance" concept. The importance of the argument relates to future worker exposure to radiation hazards.

The argument is basically one of engineering design. The Barnwell Plant is based on a design concept that segregates systems which require frequent maintenance, such as the shear which chops the fuel tubing into small segments called "hulls," from systems which do not require frequent maintenance such as chemical separation under gravity feed. Remote maintenance capability is provided in areas where systems require frequent maintenance. The arguments have not been completely resolved. Questions remain which should be answered to provide a firm basis for making a decision as to whether the government should fund any future activities at the Barnwell Plant.

During authorization and budget review hearings, DOE testified that research and development work at Barnwell should be continued. Utility support was also cited.

The Committee recommended an $11 million authorization for Barnwell in FY 1982, but not support funding for the plant beyond FY 1982.

3.4(h)—HIGH TEMPERATURE GAS-COOLED REACTOR (HTGR) PROGRAM

For a variety of institutional and funding reasons "gas-cooled" reactors have not been developed in this country. The "light water" reactors have dominated the market. The gas-cooled reactor offers advantages in safety and fuel efficiency, but requires further development.

The Subcommittee and Committee have strongly supported the development of high temperature gas-cooled reactors (HTGRs) and have encouraged the Department of Energy (DOE) to place greater emphasis on their program. U.S. effort is concentrated on development of a 2240-MW(+) HTGR steam/co-generation plant to be operational by 1993. Another major effort is being undertaken by the Federal Republic of Germany in the development of a 200MW(+) off-site, pre-fabricated reactor for industrial application. Certain aspects of the 2240-MW(+) plant require further development. Principally, the structural design of the graphite fuel elements, resolution of shifts in the distribution of core outlet temperatures and the prevention of water ingress into the primary coolant systems.

During the budget review hearings on March 9, 1982, Mr. Lowery questioned Dr. Shelby Brewer of DOE about the lack of a request for HTGR funding in the Administration's FY 1983 budget. Dr. Brewer replied that DOE had requested $43 million for FY 1983, but that the Office of Management and Budget (OMB) had denied the request from DOE in the final budget submission to Congress.

On March 17, 1982, Dr. Harold M. Agnew, President of the General Atomic Company, testified on the safety advantages inherent in the HTGR. Dr. Agnew also reviewed the Lead Plant Project which will be heavily financed by the utilities and industry.

The Subcommittee, having reviewed all aspects of the HTGR program, recommended to the Appropriations Committee that $40 for plant development and $3 million for associated fuel cycle R&D be allocated.

Additional oversight on the HTGR program included staff attendance at the High Temperature Gas-Cooled Reactor Conference in California which proved to be an excellent forum for exchange of technical information among representatives from the United States, the Federal Republic of Germany, Japan, and Great Britain.

3.4(i)—Three Mile Island

H.R. 6836 was introduced by the Subcommittee Chairman, Mrs. Bouquard, on July 22, 1982. It gives the Nuclear Regulatory Commission (NRC) the optional authority to collect funds to finance the expeditious cleanup of any commercial nuclear powerplant that sustains an accident. Following the March 28, 1979 accident at the Three Mile Island Unit 2 nuclear powerplant, the subcommittee held hearings to determine the lessons learned from the accident and to identify the potential research and development opportunities created by the availability of a disabled powerplant. The Committee subsequently authorized the Department of Energy to conduct research and development at the Three Mile Island site. However, accident cleanup operations have not been fully funded due to the inability of the utility to collect funds and dedicate them to accident cleanup. This creates a situation which not only impairs the ability of the Nuclear Regulatory Commission to protect the public health and safety but also delays the research and development effort undertaken at the site. The bill would encourage utilities and utility commissions to devise adequate financing plans to expeditiously clean up accident sites. If for any reason such financing is not provided and the utility cannot expeditously cleanup the plant, the NRC can levy a surcharge on utility bills, sent only to the customers of utility with a disabled plant, to collect the needed funds. If the NRC were forced to invoke this authority, they would also be required to collect any expenditures for research and development that reduce the costs of the cleanup operation.

3.4(j)—Nuclear Public Information and Rational Public Policy Decisions

The Subcommittee held a hearing on December 15, 1981 to review the information available to the public and, in particular, the public educational information available from the Department of Energy on its nuclear program. The issue of relative balance in DOE's information programs for various energy sources, including coal and alternative sources, was also considered. A panel of technical experts representing a number of professional societies emphasized the importance of the Government's role in informing the public on the relative benefits and risks of all energy resources. Witnesses also addressed the news media's impact on the formation of public opinion, and stressed the need to provide these news sources with more timely and balanced factual information than has often been available in the past.

Committee Publication Number 97-72.

3.4(k)—THE PRICE-ANDERSON ACT

A hearing was held on September 15, 1981 to consider the Price-Anderson Act and its impact on nuclear research and development. The Price-Anderson Act was originally enacted in 1957 to assure the public that a significant fund of money is available to pay for damages in the event of a serious nuclear accident, and to encourage development in use of nuclear energy by reasonably limiting the liability of private entitles for such damages.

The Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC) can offer Price-Anderson Act coverage, which is a kind of insurance, to entities under their jurisdiction. For the Department of Energy, these entities are the contractors which operate the government's nuclear facilities. The amount of insurance and limit on liability that the Department can offer its nuclear contractors is $500 million. The testimony indicated that the Department of Energy had 75 active, prime contracts containing Price-Anderson indemnity coverage, which included an estimated 71,000 active subcontracts. The Department of Energy stated its belief that the Price-Anderson Indemnity authority is essential to attract and retain highly qualified contractors engaged in the Department's nuclear technology development and national defense programs. Although some changes to the Price-Anderson Act may be warranted, changes were not considered to be needed at this time.

Committee Publication Number 97-47.

3.4(l)—FUSION ENERGY—GENERAL OVERSIGHT

The Subcommittee held a total of five days of hearings during the 97th Congress on the Department of Energy's Magnetic Fusion program. The Department's budget and program plans were the subject of hearings on February 25 and March 18, 1981, and March 23, 1982. Testimony from industry and university representatives was received on March 3, 1981 and March 24, 1982. Critical issues addressed included the Department's plans to implement the Magnetic Fusion Energy Engineering Act of 1980, the technical readiness of the program to move from a purely research phase into an engineering development phase, and understanding the industry, utility, and university roles in the fusion energy development program.

Committee Publication Number 97-140.

3.4(m)—FUSION ADVISORY PANEL

The Subcommittee's Fusion Advisory Panel, comprised of some of the world's most distinguished fusion scientists and educators, as well as several outstanding industrial leaders, continued in the 97th Congress to assist the Subcommittee in determining fusion programs and policies for the future. On June 26, 1981 the Panel met to consider presentations on the topic of a Center for Fusion Engineering as a mechanism for involving industry in the technology development phase of magnetic fusion. The Panel recommended that the Secretary of Energy be requested to prepare a mission statement for such a Center and a plan for its implementation emphasing the goal of achieving a Fusion Demonstration Plant around the turn of the century.

The Panel also met on March 31, 1982 to address the current status of international magnetic fusion energy research, the potential for greater international cooperation in such research, and the role industry can play in fusion research during a forthcoming period of relatively level funding. The Panel's report contained several significant findings:

(1) The United States remains the world leader in fusion research and international cooperation is producing tangible benefits for the major participants. However, both the stability of program planning and the rapidly rising funding levels for several foreign programs, threaten our leadership role and our future ability to benefit from international cooperation.

(2) The responsible involvement of industry in fusion research has, until now, been increasing and there remains a vital need to bring utilities into the program. Further participation, however, is not likely to be accomplished in the absence of a vigorous program where effort and funding are expanding in real inflation-adjusted terms.

(3) Magnetic fusion is ready for an expanded engineering effort, including a Fusion Engineering Device, as called for in the Magnetic Fusion Energy Engineering Act of 1980.

Committee Publication Number 97-74.

3.4(n)—H.J. RES. 513: EXPRESSING THE SENSE OF THE CONGRESS OF THE UNITED STATES THAT THE NATION REAFFIRM ITS COMMITMENT TO THE EXPEDITIOUS DEVELOPMENT OF MAGNETIC FUSION ENERGY

H.J. Res. 513 was introduced by Chairman Bouquard and a bipartisan coalition of 30 cosponsors on June 17, 1982. An additional 19 cosponsors were added on December 6, 1982.

The purpose of this resolution was to express continued Congressional support for the goals expressed in the Magnetic Fusion Energy Engineering Act of 1980. The resolution reemphasized the fusion program's thrusts to initiate a significant engineering development phase, to encourage industrial involvement in fusion energy, and to advance alternate fusion concepts as mandated by the Act. Because of the press of other business, the Resolution was not reported from the Subcommittee.

3.4(o)—JOINT HOUSE/SENATE FUSION ENERGY WORKSHOP

On September 8, 1982, a joint House/Senate Workshop on Fusion Energy was cosponsored by the Energy Research and Production Subcommittee and the Senate Energy Research and Development Subcommittee. The purpose of the workshop was to receive the views of some of the major participants in the fusion energy community regarding the current status, development needs, and long-term potential of fusion energy. Participants included representatives of the Department of Energy, the National Laboratories, utilities, industry, universities, the international community, the National Science Foundation, Members of Congress, and congressional staff.

Points of interest discussed at the workshop included: the continued need for a central management of the federal fusion program and encouragement of national and international research cooperation; recent scientific breakthroughs; energy problems in Japan and their hope to solve those problems with their fusion development program; and a discussion of the civilian applications of inertial confinement fusion.

3.4(p)—ELECTRIC ENERGY SYSTEMS, ENERGY STORAGE SYSTEMS, SMALL-SCALE HYDROELECTRIC R&D

In its continuing oversight of the Department of Energy's Electric Energy Systems, Energy Storage Systems, and Small-Scale Hydroelectric R&D programs, the Subcommittee conducted FY 1982 authorization and FY 1983 budget review hearings on March 16, 1981 and on March 25, 1982, respectively.

The March 25, 1982 hearing revealed the large gap between the Subcommittee's position on the need for the long-term, high-risk research of national interest conducted in these programs and the position of the Department of Energy's Assistant Secretary for Conservation and Renewable Energy. The Subcommittee identified the DOE's budget request as one based on short-term savings at the expense of long-term needs. The DOE attempted to defend the termination of all research in Electric Energy Systems and Small-Scale Hydroelectric Systems as well as the reduction of research in Energy Storage Systems by over 90 percent, which would virtually eliminate the electric vehicle of the future from manufacture in the United States.

The Subcommittee Chairman held an additional hearing on December 8, 1981 on Electric Energy Systems and Energy Storage Systems. The Administration's changes in research and development policy promised to sharply reduce federal budgets and eliminate many projects that had been supported in previous years. The position of the Administration was that industry would entirely supplant the federal research programs. Overwhelming testimony during the hearing clearly delineated industry's position as being unable and unwilling to finance research and development which is chiefly in the nation's interests. Private firms would invest in research, however, if it was in their corporate interest and if the odds of future profits resulting from such investments were highly favorable.

In addition to hearings, the Subcommittee staff participated in several oversight visits and activities, including: (a) Visit to a principal electrical power equipment supplier to ascertain areas for future research and development activity to support the competitive position of the U.S. in domestic and world markets. (b) Attendance at a conference in St. Michaels, Maryland to obtain information from industry and government on the integration of small dispersed electric power producing systems with the major distribution networks. Discussions centered around frequency and voltage control and the elimination of harmonics. (c) Visit to the Battery Energy Systems Test (BEST) facility, during which the Public Service Electric and Gas Company of New Jersey identified the need to continue operations in support of both utility company needs and vehicular battery applications.

3.4(q)—STATUS OF THE U.S. ELECTRIC POWER GENERATION SYSTEM

On June 8 and 10, 1982 the Subcommittee participated in the hearings on Electric Power Systems Reliability as part of a series of joint hearings with the Energy Development and Applications Subcommittee. The hearings focused on R&D for electric power system reliability. Specifically, the major factors affecting power system reliability were related to the features of the utility industry. Further examination of this relationship could contribute to the development of the basis for evaulating and prioritizing electric energy production R&D programs.

Witnesses at these hearings agreed that in the past decade a number of events converged to precipitate a financial crisis for electric utilities: fuel supply disruptions and cost increases, oil price-driven inflation, mandated investments in pollution control equipment, rising constuction costs, declining real rates of return, and unstable regulatory climates. Thus, restoration of the industry's financial health was perceived as being paramount to assuring adequate and reliable supplies of electricity to meet future demand.

Witnesses emphasized the importance of financial health to research and development since an industry in fiscal crisis will retrench from R&D as a non-recoverable expense.

The abrupt elimination of DOE support for the development and demonstration of technology was characterized as creating a chaotic situation. On balance, therefore, the witnesses presented a consensus that a legitimate federal role in electric energy R&D is warranted because of the industry's regulated status, financial health, and the importance of electricity to the national economy.

On December 9, 1982 the third in this series of hearings was held to review the integrity of electric power systems. Witnesses stated that electric power systems, including generation, transmission and distribution, are vulnerable to some extent to acts of nature, vandalism, sabotage, and war. However, their general opinion was that the extent of this vulnerability is much less than has been stated in recently published books. They also asserted that power could be restored to most areas within a reasonable period of time after most outages, regardless of cause, with the possible exception of war. The witnesses noted that some additional measures could be taken to make electric power systems less vulnerable, but that economics would probably be a constraint.

Committee Publication Number 97-131.

3.4(r)—URANIUM ENRICHMENT—GENERAL OVERSIGHT

The Subcommittee held a total of 4 hearings on the Department of Energy's (DOE) Uranium Enrichment Activities. The DOE's budget and program plans were the subject of hearings held on March 20, 1981 and March 30 and May 20, 1982. Representatives from industry and a DOE National Laboratory testified on March 31, 1982. Testimony concerned the Gas Centrifuge Enrichment Plant (GCEP) under construction at Portsmouth, Ohio, and the potential for advanced gas centrifuge technology.

Committee Publication Number 97-121.

3.4(s)—URANIUM ENRICHMENT DEMAND CHARGES

On March 8, 1982, the Subcommittee held a hearing on the subject of uranium enrichment demand charges which have resulted from the reduction of the Department of Energy's (DOE) power requirements to operate the three gaseous diffusion enrichment plants at Oak Ridge, Tennessee; Paducah, Kentucky; and Portsmouth, Ohio. Witnesses from the Department of Energy and the Tennessee Valley Authority testified as to the nature of these charges, DOE initiatives that have been undertaken to mitigate these charges, and the potential for future demand charges.

Committee Publication Number 97-106.

3.4(t)—URANIUM ENRICHMENT REVOLVING FUND—H.R. 3378

This bill would establish a revolving fund in the Treasury and would be used for the administration of the Department of Energy's (DOE) Uranium Enrichment Program. The Secretary of Energy is given broad authority to issue bonds, to raise money, and to invest the unused revenues. The bill requires that expenditures from the funds be authorized, but appropriation of funds would not be necessary. Appropriation language would be necessary only when borrowing authority is sought. The bill was introduced by Mr. Lujan, Ranking Republican of the Subcommittee, and Chairman Bouquard. The bill was intended to allow the Department of Energy to operate the Uranium Enrichment Program under constraints similar to those operating in the private business sector. After discussions with the Administration, no action was taken on the bill.

3.4(u)—TECHNICAL ASPECTS OF NUCLEAR NONPROLIFERATION: SAFEGUARDS

The Subcommittee held two days of hearings on August 3 and 4, 1982. The purpose of these hearings was to receive a status report of current domestic and international safeguards, to identify deficiencies in these safeguards, and to assess the adequacy of current safeguards research and development programs to address these deficiencies. Witnesses included representatives from the Departments of Energy and State, the Arms and Control Disarmament Agency, the Nuclear Regulatory Commisssion, National Laboratories, industry, and the American Nuclear Society. The witnesses agreed that more research was needed in the safeguards area; and that introduction of newer equipment and enhancement of inspector training were needed if safeguards are to keep pace with the expansion of nuclear power and the development and commercial deployment of advanced nuclear technologies.

Committee Publication Number 97-129.

3.4(v)—NUCLEAR REGULATORY COMMISSION R&D PROGRAM

The Subcommittee held hearings on May 18 and 19, 1982, to assess the management of the Nuclear Regulatory Commission's (NRC) $220 million research program. The NRC Commissioners were asked to respond to preliminary findings and recommendations in a follow-up hearing on June 15, 1982. Final findings and recommendations were approved by the Subcommittee on July 22 and by the full Committee on August 11, 1982. The findings cited, among other things, the inadequate impact of research results on regulations, the obsolescence of the label "confirmatory research," the ad-hoc nature of the priority-setting process for NRC research, undue licensee emphasis on regulatory compliance over improved safety, and the poorly-defined interface between NRC and Department of Energy (DOE) research programs.

The oversight report (House Report 97-795) supporting the final findings and recommendations was committed to the Committee of the Whole House and printed on September 8, 1982.

3.4(w)—DEPARTMENT OF ENERGY NATIONAL LABORATORIES

The Department of Energy (DOE) owns and funds a unique and valuable system of facilities for energy research and development, the DOE national laboratories. This system consists of 12 so-called "multiprogram laboratories" and 30 program-dedicated facilities (fossil, solar, nuclear, high energy physics, etc.).

These facilities represent a capital worth in the many tens of billions of dollars and employ nearly 100,000 contractor and government employees. Some of these facilities date back to the creation of the Atomic Energy Commission in 1946, while others, such as the Solar Energy Research institute, have been established only within the last decade. Some of the nation's top scientific and technical talent and some of the best research equipment in the world are located at these facilities.

The relationships among the laboratories themselves, their contractors and DOE headquarters are continually evolving and are quite complex. While the unique role of the DOE national laboratories in energy R&D is readily acknowledged, there has been persistent criticism, both inside and outside the Federal Government, that: (1) the laboratories' privileged status may unfairly exclude outside R&D contracting with private industry and the universities; (2) the laboratories are not pursuing sufficiently aggressive programs of technology and information transfer.

In order to explore a wide variety of issues concerning the health, vitality, management and future role of the laboratories, the Subcommittee joined with with the Subcommittee on Energy Development and Applications to hold three hearings.

The first hearing, held on July 29, 1981, examined the general area of DOE national laboratory relationships with industry and the university community. Dr. George Keyworth, the President's

Science Advisor, in his first formal appearance before the House of Representatives, concluded his testimony on the occasion by identifying three required initiatives:

> . . . a prentrating new analysis of the lab's role in view of our new situation and needs; an increased willingness on the part of Government, industry, and academia to cooperate and collaborate for the greater good of the country; and the exercise of far more imagination and ingenuity in creating the institutional change necessary to meet the critical needs of our times and the future.

The other witnesses, Dr. D. Allen Bromley, President of the American Association for the advancement of Science, the late Dr. Arthur Bueche, Senior Vice President for the General Electric Company, and Dr. Walter Massey, Director of Argonne National Laboratory provided critiques of the performance of the DOE labs and their cooperation with industry and the universities. There was a diversity of opinion expressed, but all witnesses agreed that it was timely to reassess the role of the laboratories.

Subsequent to this hearing, the Office of Science and Technology Policy (OSTP), at Committee Chairman Fuqua's suggestion, requested a study of the entire civilian federal laboratory system by the White House Science Council. In addition, DOE Deputy Secretary Davis requested that DOE's Energy Research Advisory Board (ERAB) undertake a similar study of the DOE multiprogram national laboratories. The ERAB report was published in September 1982. The OSTP study is scheduled to be published in April of 1983.

The second joint hearing in the series, held on June 2, 1982, ws concerned with the impact of budget uncertainties on DOE's national laboratories. The Subcommittees learned of the difficulties facing the labs in terms of loss of technical expertise and program continuity due to abrupt cutbacks in federal energy R&D funding in certain areas. The directors of four of the laboratories, Oak Ridge, Los Alamos, Lawrence Berkeley and Brookhaven, discussed the problems associated with shifting energy R&D priorities, changes in DOE's project management philosophy, and the negative impact of the annual federal budget cycle and its vagaries on the laboratory planning process.

At the second hearing the Subcommittees asked the managers of the Oak Ridge, San Francisco, Chicago and Richland DOE Operations Offices to testify on the guidance they have been giving to the laboratories during the recent period of budget uncertainty.

Most of the Lab directors agreed that because of recent experiences, it would be desirable to put the laboratories on multi-year budget cycles.

The third joint hearing was held on December 2, 1982. Its primary purpose was to review the results on the Energy Research Advisory Board's report on the Multiprogram National Laboratories. The Subcommittees were interested in ERAB's recommendations regarding: (a) the appropriate roles and missions of the laboratories vis-a-vis industry and universities; (b) the scientific and technological capabilities of the laboratories; (c) the Department's policies and procedures with respect to the laboratories; and (d) the effectiveness of the Department's use of the laboratories in meeting its energy objectives.

Testimony was presented by DOE's Director of Energy Research, the ERAB's vice-chairman who is also chairman of the ERAB laboratory panel, and an industry representative who served on the ERAB national laboratory panel. Specific unresolved issues may receive detailed follow-up by the Subcommittees in the 98th Congress.

3.4(x)—FEDERAL ENERGY RESEARCH AND DEVELOPMENT PRIORITIES

The 97th Congress was marked by continous debate over the Reagan Administration's energy policy in general and its energy R&D policy in particular. The Subcommittee joined with the Subcommittee on Energy Development and Applications to review the overall balance and priorities in federal energy R&D programs. The two Subcommittee held joint oversight activities to look at crosscutting issues that are common to most energy technologies, such as appropriate federal role, ability of the private sector to carry out R&D, criteria for setting priorities, and the pros and cons of large, federally-funded demonstration projects.

On October 15, 1981 the two Subcommittee co-sponsored with the Congressional Research Service (CRS) a seminar entitled, "Reagan Administration Policies for New Energy Technologies." The seminar provided an overview of the scope, direction, and implications of the Administration's energy R&D policies and their impact on Department of Energy programs and on several affected industries. Three particular areas were emphasized: nuclear energy, synthetic fuels, and renewable energy technologies. The seminar format allowed participants to have a frank exchange with a leading Administration energy spokesman (DOE's Director of Policy Planning and analysis), Dr. J. Hunter Chiles.

3.4(y)—SOCIETAL RISKS OF ENERGY SYSTEMS

One of the major issues in energy policy discussions concerns the assessment of comparative risks of various energy systems and fuel cycles. Application of risk analysis to energy systems dates back to early Atomic Energy Commission safety studies on nuclear power. More recently, the coal-nuclear-renewable energy debate and the outcome of the Three Mile Island accident have added to the body of knowledge and growing literature on the subject. Risk analysis, in itself, is a rapidly developing field of study.

As Congress considers programs for energy research, development and demonstration and reviews new and existing environmental health and safety legislation, it was deemed appropriate for the full Committee to examine the current state-of-the-art in risk analysis and its application to energy systems. Indeed, the Committee's interest in this area had already been well-established in the 96th Congress.

The subcommittee participated in the preparation of a full Committee hearing on this subject, which was held on June 18, 1981.

In general, the hearing give the Committee a better understanding of the strengths and weaknesses of risk analysis and its role in energy policy decision-making.

3.4(z)—SUBCOMMITTEE ON ENERGY RESEARCH AND PRODUCTION SITE VISITS AND ADDITIONAL OVERSIGHT ACTIVITIES

Nuclear fission

February 1981—Trip to Oak Ridge National Laboratory for briefing on the Breeder Reactor program and reprocessing activities.

March 1981—Participated in an oversight trip to the Three Mile Island nuclear powerplant to review the plans for clean-up as well as the proposed DOE R&D work at the plant. Meetings were held with personnel from General Public Utilities, Metropolitan Edison, the Nuclear Regulatory Commission, EG&G Company and the Department of Energy.

April 1981—Trip to the Limerick Nuclear Power Station under construction near Philadelphia, Pennsylvania, to receive a briefing on its status and tour of the Limerick station.

August 1981—Staff oversight trip to Lawrence Livermore Laboratory, Lawrence Berkeley Laboratory and Sandia-Livermore Laboratory to discuss laboratory problems and review their programs in fission.

January 1982—Participated in oversight tour sponsored by the Atomic Industrial Forum to visit nuclear facilities in Britian, Germany and France.

January 1982—Trip to Sandia National Laboratories to receive briefing on nuclear waste management.

January 1982—Oversight trip to Argonne National Laboratory—East, Hanford Engineering and Development Laboratory, Battelle Northwest, and Rockwell's Energy Technology Engineering Center for briefings on nuclear program facilities.

February 1982—Oversight trip to Oak Ridge National Laboratory to review the Clinch River Breeder Reactor Project and the Breeder Reactor Systems program.

April 1982—Participated in field briefing with the Department of Energy and the Office of Management and Budget on the activities and project status at the Three Mile Island powerplant.

May 1982—Oversight trip to Shippingport Atomic Power Station and Bettis Laboratories to review the Water-Cooled Breeder Reactor program.

October 1982—Oversight trip to the Brookhaven National Laboratory to review research programs in nuclear, e.g., nuclear science and materials activities and nuclear safeguards R&D.

October 1982—Participated in the Second SP-100 (Space Nuclear Power) Semi-Annual Technical Review at the Los Alamos National Laboratory.

November 1982—Participated in the Atomic Industrial Forum European tour of advanced nuclear electric power facilities (fast breeder reactors, fuel reprocessing and enrichment, and waste disposal) in Great Britain, France and Germany. The visits included discussions with senior officials of each country's atomic energy program.

Magnetic fusion

January 1981—Trip to the Princeton Plasma Laboratory for review of the Tokamak Fusion Test Reactor project.

August 1981—Oversight trip to the Westinghouse R&D laboratory, East Pittsburgh magnetic coil winding facility.

August 1981—Staff oversight trip to Lawrence Livermore Laboratory, Lawrence Berkeley Laboratory and Sandia-Livermore Laboratory to discuss laboratory problems and review their programs in fusion.

September 1981—Oversight trip to Lawrence Livermore Laboratories for a briefing on inertial confinement fusion.

January 1982—Oversight trip to Sandia National Laboratories to receive briefing on magnetic fusion energy program.

January 1982—Trip to Princeton Plasma Physics Laboratory to receive briefings on status of TFTR Project and other magnetic confinement fusion program activities.

February 1982—Oversight trip to Oak Ridge National Laboratory for briefings on magnetic fusion energy.

March 1982—Oversight trip to Princeton Plasma Physics Laboratory to review their activities in magnetic fusion energy.

April 1982—Oversight trip to Oak Ridge National Laboratory (ORNL) to attend the ORNL's Fusion Energy Division Annual Information Meeting.

June 1982—Oversight trip to Princeton University Plasma Physics Laboratory to attend the information meeting on the Tokamak Fusion Test Reactor and the Tokamak Fusion Engineering Test Facility at Princeton, New Jersey.

August 1982—Oversight trip to California to review fusion activities at the University of California at Los Angeles; at TRW, Inc. facilities at Redondo Beach and at its Capistrano site near San Clemente; at General Atomic Company and Inesco, Inc. at La Jolla; at General Dynamics at San Diego; at Lawrence Berkeley Laboratory; and at Lawrence Livermore National Laboratory.

October 1982—Oversight trip to McDonnell Douglas Astronautics Company in St. Louis to review the Elmo Bumpy Torus-Prototype (EBT-P) Project.

October 1982—Trip to the Grumman Corporation to discuss the nature of industry involvement in the Magnetic Fusion program under the present budget constraints of program funding.

November 1982—Staff oversight trip focusing on fusion facilities in the Federal Republic of Germany, France, and England. At Garching, in the Federal Republic of Germany, staff visited the Max-Planck-Institut fur Quantenoptik to discuss laser fusion research and the Max-Plank-Institut fur Plasmaphysiks to discuss their programs in magnetic fusion. In addition, a representative from the Institut fur Technische of Physik at Karlsruhe came to Garching to discuss their fusion technology development efforts. At Fontenay-aux-Roses, in France, staff reviewed the French program in magnetic fusion research including the activities conducted at Grenoble and plans for the construction of Tore Supra, a large superconducting tokamak. In England, staff visited the site of the JET (Joint European Torus) Joint Undertaking project at Culham, Culham Laboratory, Rutherford Appleton Laboratory, and Harwell

Laboratory, as well as the headquarters of the Central Electric Generating Board in London to discuss programs in magnetic fusion energy, inertial fusion research, and nuclear fission research.

Uranium enrichment

February 1981—Oversight trip to Oak Ridge National Laboratory for briefing on uranium enrichment.

August 1981—Staff oversight trip to Portsmouth, Ohio for annual DOE review of the Gas Centrifuge Enrichment Plant Project.

September 1981—Trip to Lawrence Livermore Laboratories for a briefing on the Advanced Isotope Separation Technology program.

February 1982—Oversight trip to Boeing's Centrifuge Manufacturing Facility for briefings on uranium enrichment.

February 1982—Oversight trip to Oak Ridge National Laboratory to receive a review of the Uranium Enrichment program.

April 1982—Oversight trip to Piketon, Ohio to tour the Portsmouth Gaseous Centrifuge Enrichment Plant (GCEP) to review and assess the plant's construction schedule.

May 1982—Oversight trip to Plum Brook Station, Sandusky, Ohio to visit Garrett's centrifuge assembly plant and to Portsmouth, Ohio to visit the DOE's Gas Centrifuge Enrichment Plant (GCEP).

July 1982—Oversight visit to Oak Ridge National Laboratory to obtain background information on facilities for separation of stable isotopes.

August 1982—Oversight trip to California to review uranium enrichment and advanced isotope separation activities at TRW, Inc. facilities at Redondo Beach and at Lawrence Livermore National Laboratory.

Electric energy systems and energy storage systems

August 1981—Staff oversight trip to Lawrence Livermore Laboratory, Lawrence Berkeley Laboratory and Sandia-Livermore Laboratory to discuss laboratory problems and review their programs in energy storage systems.

July 1982—Attended conference on Research Needs for the Effective Integration of New Technologies into the Electric Utility, in St. Michaels, Maryland.

General oversight

January 1981—Participated in a study mission to Japan and China to review work in energy research and development, aerospace programs, industrial technology, innovation and productivity.

June 1981—Participated in European Oversight trip to investigate various energy and space programs in United Kingdom, Finland, Denmark, Spain and France.

January 1982—Oversight trip to Arizona and the West Coast to tour energy facilities and meet with industry representatives on energy R&D topics.

Institutional oversight

NATIONAL LABORATORIES AND INSTITUTIONS

August 1981—Oversight trip to the Idaho National Engineering Laboratory (INEL) and Argonne National Laboratory-West to conduct program and facilities review.

April 1982—Oversight trip to the Argonne National Laboratory (ANL) to receive briefings on the Lab's programs and activities.

July 1982—Oversight visit to the Naval Research Laboratory to obtain perspective on other federal R&D laboratories as a basis for continuing oversight hearings on the Department of Energy National Laboratories.

October 1982—Oversight trip to Los Alamos National Laboratory and Sandia National Laboratories to review status of programs and facilities.

October 1982—Oversight trip to the Oak Ridge National Laboratory to review programs under the jurisdiction of the Subcommittee.

DEPARTMENT OF ENERGY OPERATIONS

September 1981—Oversight trip to the offices of the San Francisco Operations Office in Oakland, California, to discuss DOE management programs, and the reorganization of the field offices into the operations offices.

July 1982—Oversight visit to the Oak Ridge Operations Office to review status of energy programs, and Tennessee Valley Authority to review activities which are related to the Department of Energy programs.

Participation in conferences, etc.

January 1981—Attended the annual meeting of the American Association for the Advancement of Science in Toronto, Ontario.

February 1981—Attended WATTec Interdisciplinary Energy Conference and Exhibition in Knoxville, Tennessee.

August 1981—Participated in the Colorado School of Mines Energy and Minerals Field Institute oversight trip, which included tours of and discussions about oil shale facilities, strip mines, deep mines, tar sands and other aspects of energy development in the Rocky Mountain states.

September 1981—Gave briefing on the role of legislative staff at the Executive Seminar Center in Oak Ridge, Tennessee.

November 1981—Participated in the Southeastern Energy Advocacy Conference at the University of Georgia, Athens, Georgia. Topic: "Status of Energy Legislation."

February 1982—Attended the Ninth Annual WATTec National Energy Conference's "Public Awareness Symposium" in Knoxville, Tennessee.

March 1982—Attended the 1982 Tennessee Energy Conference in Chattanooga, Tennessee.

April 1982—Attended conference on "Nuclear Commerce in the 80's" sponsored by *Nucleonics Week.*

May 1982—Attended the 1982 World's Fair International Energy Symposium III in Knoxville, Tennessee.

May 1982—Represented the Subcommittee's Chairman at the Subcommittee on Energy Development and Applications' field hearing on site of the World's Fair in Knoxville, Tennessee; "Renewable Energy in the 80s: Need for Federal Role."

August 1982—Participated as Committee staff representative in the Electric Power Research Institute's Advisory Council Summer Seminar in San Diego, California.

October 1982—Attended the Second National Symposium on Acid Rain sponsored by the Pittsburgh Chamber of Commerce to assess the status of the acid rain problem from a Subcommittee perspective since it is important with regard to impacts on the relative economics of the nuclear/coal mix for electrical power generation.

October 1982—Represented Subcommittee Chairman on panel at Gatlinburg, Tennessee as part of the Oak Ridge National Laboratory's symposium entitled "Results of Health and Environment Studies on Synthetic Fossil Fuel Technologies."

3.5—THE SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY

3.5(a)—THE INFORMATION SCIENCE AND TECHNOLOGY ACT OF 1981. (H.R. 3137)

To maintain and enhance the United States' leadership in information science and technology by establishing an Institute for information Policy and Research to address national information policy issues, and for other purposes.

Summary and background of legislation

H.R. 3137 establishes an Institute for Information Policy and Research, with a lifespan of ten years, This independent institute in the Executive Branch would be a transitional mechanism to facilitate the United States' evolution toward a society based increasingly on information products and services. This mechanism would provide for cooperative planning among the Federal Government, business, educational interests, state and local governments, and for the productive and humane use of information technology in the workplace, school, and home. As structured in this legislation, the Institute would not be engaged in hardware research and development, nor would it have any regulatory authority. The primary purpose of the Institute would be to provide a focal point for policy research and analysis and a forum for consideration of the information interests of Government, business, and education. Appropriations of $6, $8, and $10 million are authorized for fiscal years 1983, 1984, and 1985 respectively.

Legislative history

H.R. 3137 was introduced by Congressman George E. Brown, Jr., on April 8, 1981 and referred to the Subcommittee on Science, Research and Technology. (A similar bill, H.R. 8395, was a introduced on December 1, 1980 in the 97th Congress by Congressman George E. Brown, Jr.) The Subcommittee held hearings on H.R. 3137 on May 27, 28 and June 9, 1981. Witnesses included representatives from industry, academia, and government agencies. The full transcript of the hearing is in Report No. 25 of the Science and Technology Committee in the 97th Congress.

The hearing analysis confirmed the view that advancements in data processing and telecommunications technologies will have a significant influence on economic and social development. The hearings reflected a general belief that information issues deserve increased attention by high ranking policymakers, the commitment of adquate resources, effective coordination among Government agencies, and input from the private sector. However, no consensus emerged on the best avenue to accomplish these goals. Although there was some sentiment among witnesses for the establishment of new mechanisms for this purpose and a widespread belief that current efforts were not statisfactory, the witnesses highlighted the difficulties in creating new entities in the current climate of budgetary constraints and many witnesses supported enhancing current operations as the most viable approach.

The Subcommittee's conclusions emphasized that information policy issues range broadly over many distinct concerns, but virtually all these issues have been profoundly influenced by the advances of the last two decades in microelectronics and telecommunications technology. The Subcommittee stated that Federal policymaking would be strengthened by a more systematic and integrated approach to the development and applications of this technology. The establishment of a recognized and on going mechanism for the interaction of public and private interests in developing and refining policy option is a key step in strengthening the information policies of the United States. The Subcommittee also stated that rapid improvements are needed and plans to continue to seek alternative mechanisms for accomplishing the goals of H.R. 3137 in the 98th Congress.

The Subcommittee took no further action on the bill.

The Subcommittee requested CRS to prepare an analysis of the hearing. The analysis was published along with the Subcommittee's conclusion and recommendations as Committee Print No. DD of the Committee on Science and Technology in the 97th Congress.

3.5(b)—TO ESTABLISH A U.S. DESIGN COUNCIL WITHIN THE DEPARTMENT OF COMMERCE. (H.R. 3839)

Summary and background of legislation

The Committee on Science and Technology and the Subcommittee on Science, Research and Technology have been keenly interested in the issues of technological innovation and productivity. Design is a key element in the innovation process. Through design new ideas and technologies are applied for public benefit.

Legislative history

H.R. 3839 was introduced by Mr. Dymally on June 8, 1981. The bill would establish a Design Council in the Department of Commerce for the purpose of promoting excellence in design. Testimony was heard by the Subcommittee on Science, Research and Technology on January 21, 1982 in Los Angeles, California. No other action has been taken on H.R. 3839.

3.5(c)—BIOTECHNOLOGY

Background

The Subcommittee has followed developments in biotechnology for over a decade. This rapidly changing and developing research and industrial field warrants continued Subcommittee interest and oversight. A major recent development in the field of biotechnology has been the execution of multimillion dollar agreements between large U.S. and foreign corporations and the research universities of the country for the support of biotechnology research. Concern about issues such as possible commingling of Federal and private sector research funds, patent rights resulting from the research, and the freedom to publish results of research, led the Subcommittee to schedule, jointly with the Subcommittee on Investigations and Oversight, a hearing on these issues on June 8 and 9, 1981. Continued rapid growth in the number and dollar value of university/industry cooperative research agreements, coupled with questions of conflict-of-interest as academic researchers became more closely involved with the growing biotechnology industry, led to a need for continuing illumination of the issues and problems involved in this field. Hearings were held on these issues on June 16 and 17, 1982.

Summary of hearings

The 1981 hearings were co-chaired by Congressmen Walgren and Gore.

Major points that emerged from the testimony are: (1) the dollar amount of support from industry for biotechnology research is still very small compared to the amount of support from the Federal Government and the industrial support should be viewed as a supplement to, not a replacement for, basic research support by NIH and NSF; (2) the universities are fully aware of the need to preserve their traditional values and have carefully negotiated their contracts with their industrial partners to this end, and (3) patentable inventions, any part of which is developed with Federal support, will be subject to Federal guidelines on patent ownership and licensing.

The full transcript of the hearing is in publication No. 97-46 of the Committee on Science and Technology.

The 1982 hearings were also co-chaired by Congressmen Walgren and Gore.

The hearings explored the research agreement between Washington University and the Monsanto company. As with other agreements that the Subcommittees had reviewed, this agreement showed evidence of careful and thoughtful drafting to protect the integrity of the university's research ethic. As more and more academic researchers have become involved with both large and small biotechnolgy firms, conflict of interest issues have arisen. Testimony was presented that the university community, with some prodding, is moving to address the problem by the issuance of guidelines and regulations for research faculty.

Other activities

1. The Subcommittee monitored the progress of the ongoing OTA study assessing the U.S. competitive position in biotechnology.

2. The Subcommittee has monitored the actions of the NIH Recombinant DNA Advisory Committee with respect to the Recombinant DNA guidelines.

3.5(d)—HEALTH INFORMATION SYSTEMS

Background

The Subcommittee joined with the Subcommittee on Natual Resources, Agriculture Research and Environment in hearings on coordinated health information systems, June 2, 3, 4 and July 23, 1981. The objectives of the hearings were to explore the potential of computer and telecommunications technology for improving health care and to review Executive Branch efforts in this area. The hearings focused on improving coordination between various health data collection activities and developing linkages between a variety of health information systems. Witnesses were representatives from the Office of Technology Assessment, National Academy of Sciences, scientific organizations, industry, academia, and government agencies.

Summary of hearings

The Subcommittees requested CRS to analyze the hearings. This analysis, as well as the Subcommittees' recommendation is presently at the Government Printing Office and will be available as a Committee Print of the Committee on Science and Technology in January, 1983.

The hearing analysis indicated that while general agreement existed that modern information technology is an important tool for enhancing health-care delivery and optimizing resources, a number of different opinions were presented on how best to realize that potential. A consensus was developed that an effort to coordinate health information could not be accomplished by the Federal goverment alone. Several witnesses expressed the view that the lead should be left to the private sector or state and local governments to develop new systems of this type. Although a specific orgainzation for linking the public and private sectors was not agreed upon, recommendations were strongly expressed that an innovative mechanism should be established to enable both groups to work cooperatively toward the utilization of modern technology in health care.

The Subcommittees concluded that although previous legislative mandates have attempted to coordinate health services research, evaluation, demonstration, and health statistics activities, this identified need has received inadequate high-level attention by government officials and other providers and users of health-care services and statistics. the Subcommittees recommended that OSTP utilize the Federal Coordinating Council on Science, Engineering, and Technology to establish a forum for: coordinating government, academic, and industry objectives, needs and capabilities in moving toward more effective health information systems; identifying related national policy issues; and developing a strategic plan for designing and implementing improved systems. OSTP is currently developing plans to address this recommendation.

3.5(e)—HUMAN NUTRITION RESEARCH AND DEVELOPMENT

Background

The Subcommittee joined with the Subcommittee on Department Operations, Research, and Foreign Agriculture of the House Committee on Agriculture in the following hearings:

June 24, 1981—Implementation Plan for a National Nutrition Status Monitoring System; and

June 23, 1982—Federal Commitment to Human Nutrition Research.

The objectives of the hearings were to: determine the Administration's policy and commitment regarding human nutrition research; establish a reasonable data when the mandated USDA/HHS Implementation Plan for a National Nutrition Status Monitoring System would be submitted to Congress; emphasize the need to better understand the relationship between food, nutrition, and health; expedite transfer of the knowledge base and technology to the scientific community and the public. Witnesses were representatives of the General Accounting Office, Department of Agriculture, and the Department of Health and Human Services.

Summary of hearings

At the June 24, 1981 hearing, USDA and HHS indicated the Departments were giving high priority to nutrition status monitoring and a joint interdepartmental implementation plan would be submitted to the Congress within sixty days. A "Joint Implementation Plan for a National Nutrition Monitoring System" was submitted to the Subcommittees on September 28, 1981. The hearing also reviewed the impact of the June, 1981 reorganization of USDA nutrition functions on the coordination, visability, and support of basic and applied human nutrition research within the Department. During the hearing, the Subcommittee requested GAO to analyze the reorganization of the USDA and its impact on nutrition. The GAO letter report was printed with the full transcript of the hearing, Report No. 23 of the Committee on Science and Technology in the 97th Congress.

The June 23, 1982, hearing was conducted in part to determine the extent to which USDA and HHS had achieved the goals and critical events outlined in the National Nutrition Monitoring System. In addition, this oversight hearing reviewed various actions by the Executive Branch which have raised concerns among university and industry scientists about the Administration's commitment to human nutrition research and the role of the Federal Government in support of this interdisciplinary research area. The full transcript of the hearing is included as Report No. 97-116 of the Committee on Science and Technology.

In general, these hearings identified the need for a comprehensive and coordinated human nutrition research plan and for a Federal focus for government, academic, and industry cooperation. The need for a human nutrition research plan was further supported by a GAO study requested by the Subcommittee in the 96th Congress. The 1982 GAO report entitled, "Progress Made in Federal Human Nutrition Research Planning and Coordination; Some Improvements Needed", recommended that "The Director of OSTP should direct the Joint Subcommittee on Human Nutrition Research to develop a Federal nutrition research plan by updating and expanding its December 1980 report on Federally supported human nutrition research." The Director of OSTP has informed the Subcommittee that the GAO recommendation has been accepted and that "The process of preparing such a plan will greatly enhance Federal nutrition research programs."

3.5(f)—REVIEW OF THE NATIONAL BUREAU OF STANDARDS ORGANIC ACT

Summary and background of legislation

The National Bureau of Standards was initially established by the Congress in 1901 with the primary function of conducting technical and scientific work in support of the nation's system of weights and measures. Over the years since then the NBS has achieved an outstanding reputation for its work on the development of standards of all types. It has also branched out into a number of related technology-development activities. Thus, during World War Two it made significant contributions through work on such things as the proximity fuze and the manufacture of high quality optical glass. In recent years, NBS has done significant work related to the advancement of new energy technologies.

The Committee, noting that the last major review of the NBS mission and the Organic Act took place in 1950, and being acutely aware of the lag in technological innovation in many sectors of industry, decided to initiate a comprehensive review of the Bureau's mission as currently defined in the light of future needs within the time frame of the next 20–25 years.

Several studies were commissioned in preparation for this review. The Congressional Research Service of the Library of Congress performed a study entitled "A Review of its Organizations and Operations" (May 1981). The General Accounting Office carried out a study entitled "Information on the Mission and Functions of the National Bureau of Standards" (April 1981). In June 1981, three days of hearings were held at which the Administration, beginning with Commerce Secretary Baldrige testified. The Subcommittee also heard from a number of state officials, industry leaders, and academic experts, including the then Chairman of the Statutory Visiting Committee, Mr. William D. Carey.

Several significant themes emerged from the studies and the hearings. An important theme was the need to rebuild and strengthen the Bureau's ties with the community of state and local officials who have responsibility for the day-to-day use and accuracy of measurement standards. Other themes include: the possible expanded role of NBS as the Government's equivalent of the corporate research laboratory; the need to focus increased attention on NBS's function in communications between Government and industry in the field of research, development, and technology; the possible need to make explicit NBS' responsibilities for research, development and standards work in the fields of computers and the life sciences; the special role and potential contributions NBS can made based on its already strong programs of robotics and flexible manufacturing; the advantages of adjusting the size, composition and functions of the Visiting Committee; the expanded use by NBS of joint NBS/University Research Institutes of which only one is in existence; and the advantages and disadvantages of a more balanced use of in-house research and external research based on contracts and grants.

Legislative history

The Subcommittee's work to date, including the June 1981 hearings was based on a bill draft entitled the "National Bureau of Standards Amendments of 1981". This draft was not formally introduced and does therefore not carry a House Resolution number.

3.5(g)—IMPLEMENTATION OF PUBLIC LAW 96-480, THE STEVENSON-WYDLER TECHNOLOGY INNOVATION ACT OF 1980

Background

In the 96th Congress the chief legislative result of the Committee's work on innovation and productivity was the passage of Public Law 96-480, the Stevenson-Wydler Technology Innovation Act of 1980. The Stevenson-Wydler Act was passed with bipartisan support. The Act has five principal thrusts:

(1) To establish an organization in the Executive branch to study and stimulate technology;

(2) To promote technology development through the establishment of centers for industrial technology;

(3) To stimulate improved utilization of federally funded technology by the private sector and state and local governments through technology transfer;

(4) To provide encouragement for the development of technology by the establishment of a national technology medal to be awarded to individuals and companies which have made outstanding contributions in technology;

(5) To encourage the exchange of scientific and technical personnel among academia, industry and federal laboratories.

The Stevenson-Wydler Act was signed into law by President Carter shortly before the end of his Administration. When the Reagan Administration took office it decided not to implement the Act fully. Most of the funds requested by President Carter for implementing the Act were rescinded or reprogrammed by the Reagan Administration.

Summary of hearings

Recognizing that the Act was not being fully implemented, the Subcommittee on Science, Research and Technology held hearings on the implementation of the Act on July 14, 15 and 16, 1981. Twenty-eight witnesses from government, industry, professional associations, and academia participated. In addition, ten statements for the record were received. Following the hearings, an analysis of the hearings record was prepared by the Congressional Research Service at the request of the Subcommittee. The analysis has been printed together with the complete hearings record as Committee Print No. 81. In general, the hearings showed that the law is not being implemented as envisioned by Congress when it was passed. The policies of the Reagan Administration are apparently at odds with the approach mandated in Stevenson-Wydler. Testimony of government witnesses showed that there has been modest progress towards implementing the technology transfer provisions of the Act but little or no progress towards implementing its other provisions. Senator Harrison Schmitt, Sen. Charles Mathias and non-government witnesses expressed dismay that implementation had not been achieved more fully and expressed their belief that the Act should be more fully implemented.

Other efforts to implement the act

(1) GAO Study.—Together with Mr. Schmitt and Mr. Mathias, Mr. George E. Brown, Jr. and Mr. Walgren wrote to the Comptroller General on May 25, 1982 and asked that the GAO survey the extent of implementation of Section 11 of the Stevenson-Wydler Act by federal laboratories. GAO agreed to perform this investigation and has worked closely with the staff of the Committee in carrying out the investigation. Results of the GAO study are expected to be available in 1983.

(2) Appropriations.—Because the President did not request adequate funding for implementing the Stevenson-Wydler Act in Fiscal Years 1982 and 1983, Chairman Fuqua, together with other members of Congress and concerned citizens from outside the Congress, has worked actively to convince the Appropriations Committee that funds to implement the Act should be made available above the President's request by that Committee. For Fiscal 1983 the appropriations bill passed by the House, which included funding for the Department of Commerce, contained $2 million above the President's request for implementing the Stevenson-Wydler Act.

3.5(h)—THE HUMAN FACTOR IN INNOVATION AND PRODUCTIVITY

Background

As part of the program in innovation and productivity of the Subcommittee on Science, Research and Technology the Subcommittee held six sessions of hearings on the Human Factor in Innovation and Productivity on September 9, 10, 11, 15, 16, 17, 1981. On July 28, two months earlier, the American Association for the Advancement of Science held a seminar "Innovation and Productivity: A Human Perspective" which was sponsored by members of the Committee on Science and Technology. Both the hearings and the seminar dealt with elements of the innovation process which involve management, labor, and their interrelationships. Consideration of the human factor is intended to help integrate technical and human concerns to achieve increased productivity and innovation. Twenty-eight witnesses representing government, industry, academia and professional societies presented testimony at the hearings. An additional four people participated in the seminar.

Summary of hearings

The human factor report presents findings and recommendations of the Subcommittee concerning the issues of labor-management cooperation, participative decision-making, employee compensation plans, training programs for technically skilled personnel, the need for a federal focus for analyzing factors which affect productivity in the American economy, and the need for research on the human factor innovation and productivity.

The record of the hearings and seminar has been published as Committee on Science and Techology Publication No. 97-51. A committee report, "The Human Factor in Innovation and Productivity" (Serial 97-FF) has been issued. That publication includes an analysis of the Subcommittee hearings prepared by the Congressional Research Service as well as the Subcommittee report.

3.5(i)—Research to Aid the Handicapped

As part of its jurisdiction, the Science, Research and Technology Subcommittee has had a continuing interest in exploring the ways that the Nation's scienific knowledge and technological expertise could be utilized for the benefit of handicapped individuals.

During the first session of the 97th Congress, joint hearings were held on October 1 and 2, 1981, with the Subcommittee on Select Education of the House Committee on Education and Labor to review the operations of the National Institute of Handicapped Research. NIHR was created in 1978 to facilitate research which be of benefit to handicapped individuals and to coordinate those research efforts among Government agencies. The establishment of the Insitiute was a direct result of initiatives started by the Committee on Science and Technology during the 94th Congress.

In the seond session, joint hearings were held with the Senate Committee on Labor and Human Resources on September 29, 1982, to review the Office of Technology Assessment report: Technology and Handicapped People, A major conclusion of the report was that technology's great potential for aiding disabled people was not being fulfilled. The hearing addressed a number of issues, including the need for the integration of evaluation and marketing activities with all other services; more consumer involvement; the need to reduce financial barriers for the acquisition of technology for the disabled; and the need for qualified personnel in rehabilitation facilities. An analysis of the hearing record and a final report is expected to be completed in early 1983.

Also, within its jurisdiction, the Subcommittee continued to monitor handicapped research programs at the National Science Foundation and National Bureau of Standards.

3.5(j)—Forecasting Needs for the High Technology Industry

Background

As part of its continuing study of innovation and productivity the Subcommittee on Science, Research and Technology held a hearing at the Massachusetts Institute of Technology on November 24, 1981. The hearing focused on science and engineering manpower, on capital formation in high-technology industries, and on other matters of concern to the growth and health of high-technology industry. Ten witnesses from universities and businesses in Massachusetts testified in person, and eight other statements were submitted for the record.

Summary of hearing

Witnesses addressed (1) engineering manpower: the need to monitor supply and demand, current faculty shortages, the need for the federal government to address the problems, the need for instructural and research equipment, the need for graduate student support, shortages of trained people in certain engineering specialties, and the need for retraining programs, (2) small business: the need to encourage more startups, the desirability of passing the Small Business Innovation Development Act, (3) tax incentives for high technology industry: the importance of DISC, repeal of section 861 of the tax code, capital gains taxes, etc., (4) the need for more attention to the training of women, and (5) the need to encourage exports.

Committee Publication Number 97-67.

3.5(k)—OVERSIGHT OF METRIC CONVERSION ACT OF 1975 AND THE U.S. METRIC BOARD

The enactment of the Metric Act of 1975 (Public Law 94-168) culminated almost a decade of committee activity in the field of the conversion of the nation's units of weights and measures from the English to the metric system. The Metric Act established the 17 member U.S. Metric Board with representation by industry, labor, consumers, small business and other interested and affected parties. The Board was charged with the following two major functions: the coordination on the basis of voluntary participation, of metric conversion in each sector of business, commerce and industry; and the conduct of a program of public participation about the metric system. However, the Board had experienced some difficulties with the development of a comprehensive plan of action, and was furthermore threatened with severe budget cuts by the Reagan Administration.

3.5(l)—LOCAL INCENTIVES FOR HIGH TECHNOLOGY FIRMS AND INNOVATION

Background

As part of its broad effort in the area of innovation and productivity, the Subcommittee on Science, Research and Technology has been working to identify the factors that lead to the establishment and success of high technology firms in a region. The examples of success in the Silicon Valley in California and Route 128 near Boston make it clear that when the right conditions exist a concentration of successful high technology firms can be established in a localized area. To investigate this issue the Subcommittee both held a hearing and urged the Office of Technology Assessment to study the issue.

Summary of hearing

On February 16, 1982 a hearing on Local Incentives for High Technology Firms and Innovation was held by the Subcommittee in Columbus, Ohio. Testimony was presented by eight witnesses representing universities, non-profit research institutions and industries in the Columbus area. The record of the hearing has been printed as Committee Print No. 90. A summary of the major points made by each witness is included at the front of that hearing record. There was general agreement among the witnesses that links between universities and businesses should be strengthened and that a strong system of higher education in science and technology is a critical factor in fostering the establishment and success of high technology firms. Several witnesses emphasized also the need for financial institutions to provide capital for fledgling high technology industries.

OTA study

The Office of Technology Assessment, in carrying out its responsibilities, proposed to the Committee that an OTA project in technology innovation and regional economic development might be useful. The Committee encouraged OTA to pursue this line of thinking and on July 26, 1982 an exploratory workshop was held on this subject by OTA. Following the workshop a proposal was developed by OTA for a larger scale study on this issue. Chairman Don Fuqua of the full Committee and Doug Walgren of the Subcommittee on Science, Research and Technology then wrote the Chairman of the Technology Assessment Board and asked that OTA undertake a study of the factors that promote the development of high technology industry in states and localities. The study was approved by the Board and began in October 1982. The study is scheduled to conclude in March 1984. Interim reports are expected to be issued in March 1983 and October 1983.

Committee Publication Number 97-90.

3.5(m)—INNOVATION AND PRODUCTIVITY

Background

The Subcommittee conducted an extensive program on innovation and productivity during the 97th Congress. The program consisted of legislative activities, oversight hearings, the preparation of hearing analyses and oversight reports, cooperation with the full Committee on legislative activities, cooperation with the House Task Force on Industrial Innovation and the publication of the newsletter "Congressional News Notes on Innovation and Productivity". The Subcommittee pursued three basic strategies during this program:

(1) to study and understand the problems of innovation and productivity in the economy of the United States very broadly;

(2) to work on innovation and productivity legislation which fell within its jurisdiction;

(3) to cooperate with the efforts of other congressional groups regarding innovation and productivity issues either lying outside the Subcommittee's jurisdiction or crossing jurisdictional boundaries.

Summaries of the major activities under the innovation and productivity program are included elsewhere in this activities report.

Legislation

(1) National Engineering and Science Manpower Act of 1982 (H.R. 7130).

(2) Uniform Federal Research and Development Utilization Act of 1981 (H.R. 4564) (a full Committee activity).

(3) Small Business Innovation Development Act (H.R. 4326) (a full Committee activity).

Oversight

(1) Stevenson-Wydler Act Implementation—Hearings were held on implementation of the Stevenson-Wydler Technology Innovation Act of 1980 (Public Law 96-480). In addition, the Committee worked in other ways for implementation of the Act throughout the 97th Congress.

(2) The Human Factor in Innovation and Productivity—Six days of hearings and a one day seminar were held regarding the Human Factor in Innovation and Productivity. A report was issued based on the hearings. (Committee Publication number 97-51)

(3) Local Incentives for High Technology Firms and Innovation—A field hearing was held in Columbus, Ohio on this subject. The Office of Technology Assessment was asked to study this issue further.

(4) Robotics—Staff members monitored OTA robotics studies. Site visits were made to robotics installations.

(5) Forecasting Needs for the High Technology Industry—A field hearing on this subject was held in Boston, Massachusetts.

Other

Newsletter—The Subcommittee published a modest newsletter, "Congressional News Notes on Innovation and Productivity". It has been published and distributed every other month. The newsletter is being sent to all Members and Committees of the House and Senate and to interested individuals. The newsletter covers only congressional activities in the area of innovation and productivity.

3.5(n)—COMPUTER TECHNOLOGY AND DEVELOPING COUNTRIES

In the spring of 1982, the French Government established the Centre Mondial por Informatique et Resources Humaine (World Center for Microprocessing and Human Resources) a $20 million effort aimed at transferring microprocessing technology to developing countries, and improving computer literacy in the Third World.

Representatives from the Board of Directors of the World Center appeared before the Subcommittee on Investigations and Oversight and the Subcommittee on Science, Research and Technology on May 19, 1982, to explain the goals and operations of the Center.

Using the World Center as a model, on July 15, the Subcommittees convened independent experts, representatives from the U.S. microprocessing industry, and officials from the Department of State, the Agency for International Development and the Federal Communications Commission. The focus of the second hearing was to identify existing U.S. policies for transferring microprocessing technology to lesser developed countries, to identify whether the issue deserved further study, and to come to some conclusions about the advisability of such a policy. The hearings revealed that while the U.S. Government is devoting monies to study the issue, there appears to be little in the way of a formal policy or interagency coordination on the issue. The views of the domestic microprocessing manufacturers varied from disinterest in such technology transfers to aggressive marketing strategies for developing countries.

Committee Publication Number 97-137.

3.5(o)—SECRECY PROPOSALS AND THE IMPACT ON SCIENCE AND TECHNOLOGY

Background

The Subcommittee joined with the Subcommittee on Investigation and Oversight on March 29, 1982 in hearings on recent Administration proposals for increased secrecy and control of scientific and technical information. The objectives of the hearing were to:

(1) ascertain the impact on science and technology of present and proposed measures designed to limit the free exchange of information with foreign countries and their nationals;

(2) determine the societal, economic, and political consequences of proposed changes in rules, regulations, orders, and directives intended to increase controls over scientific and technical information exchange.

Witnesses were representatives from the Executive Branch, National Academy of Sciences, industry, academia, and scientific organizations.

Summary of hearings

The Subcommittees requested the CRS to analyze the hearings. The hearing analysis reiterated the concept that science, technology and national security are complex and difficult issues. On the one hand, secrecy may weaken science and technology and thereby adversely affect national security. While on the other hand, secrecy also may inhibit the transfer of technological information and know-how to adversaries and thus enhance national security. A general consensus prevailed that to strengthen science and technology as well as national security, secrecy restrictions on scientific inquiry should be minimized unless a specific scientific activity can be identified as directly related to a specific military application of an adversary. However, a consensus did not develop on the most effective mechanism to achieve a balance between legitimate national security considerations and the free exchange of scientific and technical information.

3.5(p)—SETTING PRIORITIES FOR SCIENCE

Background

On September 30 and December 8, 1982, the Subcommittee on Science, Research and Technology, together with the Subcommittee on Investigations and Oversight began what is planned to be a series of hearings focusing on the question: What influences research and development priorities in the United States?

Summary of hearings

The Subcommittees' mission was not so much to pinpoint particular priorities, but rather to focus on the R&D policy formulation, and to identify the various economic, social and political elements that influence priority setting both in government and industry. During the September hearing, the Subcommittees heard from observers from academia and the government. At the second hearing in December 1982, the Subcommittees examined how various industrial organizations set priorities for science.

3.5(q)—ROBOTICS

Background

Robotics technology is emerging as a key technology for the future of the American economy. Along with other computer aided technologies, robotics is having a significant impact on manufacturing, and that impact will increase. Although the Subcommittee did not hold hearings on robotics during the 97th Congress, it did engage in several activities regarding robotics.

Activities

1. Chairman Walgren authored an article "Prospects and Problems" for the August 1982 issue of Enterprise magazine, an issue that was devoted completely to robotics.
2. The Subcommittee gave special consideration to robotics in the authorization bill for the National Bureau of Standards for 1983. (H.R. 5726; S. 2271).
3. On July 31, 1981 staff attended an OTA workshop on Social Impacts of Robotics.
4. Staff attended I&O Subcommittee hearings on robotics.
5. Staff attended meetings of the OTA advisory panel for the study on Automation and the Workplace.
6. Chairman Fuqua, along with Senator Schmitt, sponsored a Congressional receiving station for a seminar on robotics presented by the Institute for Electrical and Electronics Engineers on December 7, 1982, which was telecast by satellite.

3.6—THE SUBCOMMITTEE ON SPACE SCIENCE AND APPLICATIONS

3.6(a)—NASA PROGRAM MANAGEMENT AND PROCUREMENT PROCEDURES AND PRACTICES

The purpose of the Subcommittee's Program Management and Procurement Procedures and Practices oversight hearing on June 24 and June 25, 1981 was to review Federal procurement regulations and practices as they related to NASA research and development programs; to review NASA program management procedures and practices and to review NASA's implementation of the conclusions and recommendations of the study they conducted on their own procedures and practices (the "Hearth study").

NASA has established an outstanding record of achievement and success in manned space flight projects such as Apollo and Skylab as well as many space science and applications projects. A major reason for NASA's past successes has been the high caliber of project management within the agency and demanded of the contractors by the agency.

Over the years, NASA has had a generally good record of reconginzing problem areas and limiting the impact of problems on project costs and schedule. This is not to say that every NASA project has been completed on time or within cost estimates.

A number of large projects, for example, Galileo, Landsat D/D-prime, Space Telescope and ISPM has experienced costs and schedule problems. In several cases, fiscal year funding limitations have resulted in the deferral of milestone, which, as can be noted from experience with the shuttle program, often results in significant cost increases and schedule delays. Some projects have suffered from management problems at both the NASA field centers and the involved contractors.

In September 1980 the Subcommittee requested the NASA Administrator to appoint a team of senior NASA officials to examine both NASA and contractor program management and procurement procedures and practices. This review was accomplished under the leadership of Mr. Don Hearth, Director, Langley Research Center.

Committee Publication Number 97-16.

3.6(b)—SPACE COMMUNICATIONS

The purpose of the Subcommittee's Space Communications oversight hearings on July 8 and July 9, 1981 was to review NASA's past involvement in space communications research and development; to review NASA's current research and development in space communications (30/20 GHz program in particular); to discuss the research role of NASA versus private industry as perceived by both a satellite builder and carrier and to discuss the future for space communications.

Communications via satellite is now into its third decade. NASA has taken initiatives in the past on advanced research, and subsequently has made major breakthroughs in satellite communications technology.

NASA has not undertaken a new research and development program to develop the technology that will assure the availability of adequate and affordable satellite communications beyond 1990. In particular, the advanced research in the 30/20 GHz frequency (Ka band) offers relief from the orbit and frequency congestion that worldwide satellite communications competition has created.

Committee Publication Number 97-17.

3.6(c)—CIVIL LAND REMOTE SENSING SYSTEMS

The purpose of the Subcommittee's Civil Land Remote Sensing System oversight hearings July 22 and July 23, 1981, was to review progress toward, plans for, and issues pertinent to private sector involvement in the establishment of an operational Civil Land Remote Sensing System.

Since 1977 the House Subcommittee on Space and Applications and the Senate Subcommittee on Science, Technology and Space have recognized the need for an encouraged the formulation of an operational Civil Land Remote Sensing System. Thus the hearings were held jointly by the two subcommittees.

Witnesses at the hearings included representatives of Federal agencies, private sector companies who might operate a commercial system, state government user-agencies, and private sector users.

The previous Administration assigned NOAA the lead responsibility for civil land remote sensing systems and directed it to further private sector opportunities with the goal of eventual operation of a land remote sensing system by the private sector. The new Administration's plans have limited funding for Civil Land Remote Sensing Systems to Landsat D and D′ and NOAA has been directed to make arrangements for the private sector to provide follow-on systems.

Neither the current nor the previous administration has provided a comprehensive policy which addresses national remote sensing needs and associated issues. Uncoordinated agency roles and the lack of an institutional framework are detrimentally affecting both growth in the utilization of remote sensing data and planning for an operational system.

The Commerce Department has been directed to further private sector opportunities in the Civil Land Remote Sensing activities. However, the areas of participation and definition of private sector responsibilities that would best serve the national interest are yet to be difined. There are several options which could be considered: Government/industry joint ventures, a quasi-government corporation, leasing of system segments and private ownership.

Committee Publication Number 97-40.

3.6(d)—FUTURE SPACE PROGRAMS

The purpose of the Subcommittee's Future Space Programs oversight hearing on September 21, 22 and 23, 1981 was to discuss the future of the U.S. space program. Present space programs often are treated as a budget drain—as consumers of our national resources.

Another point of view is that space programs represent an investment in the future. It is certainly true that all Federal programs will have to compete for a severely limited budget over at least the next several years.

In view of this competition, and the two points of view, an examination was made of how space programs relate to our Nation's wealth, broadly defined. In other words, what space programs, if any, could be fruitful investments? Because space exploration and exploitation are long-term endeavors, the hearings were designed to look 20 to 50 years ahead, to see what society might look like then. What will our needs be? How could space programs relate to conditions on earth?

If space goals can be defined in terms of what is likely to be happening on earth, and if achieving space goals can be expected to contribute to the solution of foreseen problems, then the relative importance of specific programs that are aimed at the goals can be determined.

The hearings were intended to put space programs in a valid social, historical, and economic context which will be useful, for example, in making decisions on long-lead funding for future programs.

Witnesses included an historian, a demographer, a retired General (USAF), a "futurist", several businessmen, a physician, a scientist and research manager, and an organizer of popular support for space programs.

Committee Publication Number 97-50.

3.6(e)—THE SPACE TELESCOPE

The Subcommittee on Space Science and Applications held oversight hearings on Space Telescope on May 24 and May 25, 1982.

The Space Telescope (ST) was the largest development project in NASA's 1983 Budget and has been a top priority project in the agency for some time. This is entirely appropriate because ST promises to lead to major advances in astronomy.

The prime reason for building the space telescope is scientific. Therefore, this set of hearings started with the Space Telescope Science Institute which will be the principal output channel through which ST results will flow. A principal question explored at the hearing was whether the Space Telescope Science Institute would be adequately supported throughout its life. Another had to do with the allocation of observing time.

The second day of the hearing reviewed the progress in development of the telescope.

The Committee also solicited several statements from outside groups to provide criteria for the future evaluation of Space Telescope operations by Congressional oversight committees.

3.6(f)—THE FIFTH SPACE SHUTTLE ORBITER

The purpose of the Subcommittee's Fifth Space Shuttle Orbiter Oversight hearing on June 15, 1982 was to conduct hearings on the need for a fifth Space Shuttle Orbiter.

A number of withnesses who testified during the FY 1983 NASA Authorization process repeatedly stressed the need for a fifth Space

Shuttle orbiter. NASA has recently stated that it also believes that space traffic requirements for the late 1980's will necessitate on additional orbiter. With increasing costs and third tier subcontractors beginning to run out of STS work, NASA must decide by late summer or early fall of 1982 whether to proceed with procurement of long lead items for a fifth orbiter to guarantee a delivery price around $1 billion.

The Space Transportation Company of Princeton, N.J. has submitted an unsolicited proposal to privately finance the purchase of the fifth orbiter in exchange for exclusive marketing rights of all foreign and commercial payloads. NASA is in the process of evaluating a substantially revised second STC proposal to determine whether the concept is feasible, and if it is, how can it be implemented. STC is financially backed by Prudential Insurance Company of America.

Committee Publication Number 97-105.

3.6(g)—UNISPACE '82

The Subcommittee on Space Science and Applications held a hearing on July 14, 1982 on Unispace '82.

The Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space, Unispace '82, was held in Vienna, Austria, in August 1982. Several Members of Congress served in the U.S. delegation as Congressional Advisers.

The Subcommittee held a hearing to acquaint Members with the issues that would be discussed at this conference. It provided the U.S. delegation an opportunity to describe the preparations leading up to the conference. It provided Congress an opportunity to make inputs into the process and it prepared the Congressional Advisers to deal with the policy issues resulting from Unispace '82.

The principal issues that were expected to be discussed at the conference were:

—The militarization of space and nuclear power sources in space;
—Prior consent over distribution of remotely sensed data of one's own territory;
—The assertion of sovereignty over the geostationary orbit (GSO) and the allocation of the GSO as a scarce resource;
—More space-related aid to less developed countries;
—The proposed establishment of a U.N. Center for Outer Space;
—U.N. control of Reconnaissance/Remote Sensing from Space.

Witnesses were invited from the United Nations, from the U.S. delegation, and from the private sector.

3.6(h)—SPACE POLICY

The Subcommittee on Space Science and Applications held oversight hearings on August 4, 1982 to review the results of the Administration's space policy review. The Subcommittee has repeatedly advocated the establishment of long-range space goals and resolution of many other policy issues which confront our Nation's space activities.

Witnesses included representatives of the Office of Science and Technology Policy, the National Aeronautics and Space Administration, and the Department of the Air Force.

Committee Publication Number 97-143.

3.7—THE SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS

3.7(a)—AIRCRAFT COLLISION AVOIDANCE

The Subcommittee on Transportation, Aviation and Materials has jurisdiction over the development of collision avoidance systems, and has held numerous hearings on the subject over the years.

In order to reexamine all of the issues, the Subcommittee on Transportation, Aviation and Materials held numerous hearings during the 97th Congress. The aims were to determine what type of collision avoidance system this Nation could develop, with the Federal Aviation Administration as the lead agency; and, to discuss the FAA's currently recommended system. At those hearings, the Subcommittee conducted a thorough review of the technical and policy aspects of the issues in order that the safest possible air transportation system could be developed for the public.

Committee Publication Number 97-52.

3.7(b)—AUTOMOTIVE TECHNOLOGY

On July 7, 1981, the Transportation, Aviation and Materials Subcommittee held a hearing in an effort to determine the proper Federal role in automotive research and technology development. Technology development has a lot to do with the future of the American automobile, and the evolving and changing technological processes are posing a real threat to the industry, as well as challenges from abroad. The future of the automobile industry was explored and various proposals for implementing an expanded Federal role in research, development and technology were discussed.

Committee Publication Number 97-29.

3.7(c)—GENERAL AND COMMUTER AVIATION TECHNOLOGY

On August 27, 1981, the Transportation, Aviation and Materials Subcommittee held a joint hearing with the Subcommittee on Aviation of the Senate Committee on Commerce, Science and Transportation to emphasize the importance of general aviation to the overall health of the Nation's economy. Historically, this country has led the world in aviation. Largely due to its advanced technology and success in the international marketplace, the aviation industry has had an extremely favorable impact on the American economy. Yet, in spite of its past success and proven importance, our aviation industry may be facing severe problems such as decreased Federal support for aeronautical R&D, and increases in aviation taxes.

3.7(d)—METHANE TRANSPORTATION R&D ACT OF 1980—OVERSIGHT

The Methane Transportation Research, Development and Demonstration Act of 1980 provides for advanced and accelerated research and development of methane-fueled vehicle design and related technologies, and for the facilitation and removal of barriers to the use of methane-fueled vehicles as an alternative to gasoline or diesel-powered vehicles, where practicable. On November 19, 1981, the Transportation, Aviation and Materials Subcommittee met to consider the Department of Energy's progress and their plans for implementation of that act.

Committee Publication Number 97-56.

3.7(e)—AVIATION SAFETY

In an effort to more fully understand aeronautical safety hazards, the Subcommittee on Transportation, Aviation and Materials held several hearings, some jointly with the Subcommittee on Investigations and Oversight, on the issue. The focus of the hearings concerned Congress' responsibility to assure continued oversight of issues involving aviation safety, and the utilization of improved technologies in areas where it could aid in avoiding accidents. The air disasters during the past year gave added emphasis to the hearings and testimony centered on two main themes: airport and aircraft operations in bad weather; and cabin interiors and the crashworthiness of aircraft. The Subcommittee recommended that the Government continue to support and fund research and development in areas of aviation safety so that safety advances will continue.

The Subcommittees issued a report which recommended, among other things, that FAA issue more precise guidelines for deicing aircraft; FAA develop better procedures for checking ice build-up on aircraft awaiting take-off; and FAA allow ADAP funds to be expended for devices which measure the friction on runways during bad weather. The FAA adopted many of the Subcommittees' recommendations in an Air Advisory Circular in October, 1982.

Committee Publications Numbers 97-85 and 97-126.

3.7(f)—ADVANCED RAIL TECHNOLOGY

On April 5-6, 1982, the Transportation, Aviation and Materials Subcommittee held hearings to assess the technological needs and opportunities of American rail transportation in order to lay the basis for future national transportation policy. Although the general focus of the hearings was on rail technology, interrelated economic and regulatory issues were also discussed. It was the consensus of a wide variety of rail experts that high speed rail technology is readily available and that high speed rail systems should be developed and expanded.

Committee Publication Number 97-88.

3.8—THE SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

3.8(a)—ETHICAL ISSUES IN BIOMEDICAL RESEARCH

As part of a series of hearings into ethical issues current in biomedical research, the Subcommittee began an inquiry to review cases where biomedical investigators had been alleged to have falsified scientific data. Hearings were held on March 31, and April 1, 1981. Witnesses included several researchers who had been accused of falsifying data as well as representatives from major professional and academic societies, and academic institutions.

In recent years, what appears to be an increasing number of cases involving charges of fraud in the conduct of biological research at major biomedical research institutions in the United States prompted the Subcommittee investigation. Allegations have been made that preeminent researchers and their associates have falsified research data in an attempt to support major theories, at institutions such as Harvard Medical School, Massachusetts General Hospital, Cornell Medical School, the Yale School of Medicine, Wake Forest University, the University of California at Los Angeles. Most, if not all, of the research had been conducted with federal funds.

The Subcommittee's inquiry was twofold: one, to discover the components of the research environment that might encourage a scientist to commit fraud; and two, to examine institutional and governmental apparatus to find and respond to cases of data falsification.

It was apparent from the hearings that biomedical research is an extremely competitive field. Pressures such as that generated by the need to be the first to publish, competition for dwindling research grants, competition for prizes and similar factors, together with the secrecy surrounding research, and the respect accorded fellow scientists, provided an environment where fraud can be committed. The absence of routine outside review of raw data and research notes, together with the cost and time of duplicating experiments, makes discovery of fraud unlikely. The integrity of the researcher and his associates, the concern that an experiment cannot be duplicated, and the fear of loss of scientific reputation are major protections against the falsification of data.

3.8(b)—HYPERTENSION RESEARCH

On April 13 and 14, 1981, the Subcommittee held hearings on the relationship between sodium and hypertension. Unlike most areas concerning the relationship of diet to health, there is now a consensus, which was confirmed during the Subcommittee's hearings, that sodium reduction may be important for all Americans, and particularly for those who already have mild or high blood pressure.

Two recommendations were made by the Subcommittee in its report (M) following the hearings:

1. The Food and Drug Administration (and other relevant U.S. Government agencies) should provide more accessible information for consumers and health professionals regarding the health effects of excessive amounts of sodium in the diet; and
2. Legislation should be enacted to require that processed foods regulated by the FDA should be labeled to show the amount of sodium they contain when levels exceed 35 milligrams per serving.

Committee Publication number 97-M.

FDA has published proposed regulations requiring sodium labeling when nutrition labeling is used and is in the process of reviewing the comments on the proposal.

3.8(c)—PHARMACEUTICAL INNOVATIONS

Pharmaceutical research was the subject of a hearing held jointly with the Subcommittee on Natural Resources, Agriculture Research and Environment on April 27, 1981.

The hearing concerned the nature and extent of research and development operations by the pharmaceutical industry. Also brought out at the hearing were problems encountered by the government and industry in the regulatory process of the New Drug Approval Process.

3.8(d)—HEALTH EFFECTS OF VIDEO DISPLAY TERMINALS AND RADIO FREQUENCY HEATERS AND SEALERS

On May 12 and 13, 1981, the Subcommittee held hearings to examine allegations of potential harmful health effects to workers exposed to, or using Video Display Terminals (VDTs) and Radio-Frequency (RF) heaters and sealers. The two devices, as the hearing revealed, have very different risks associated with their use.

VDTs.—Concern about hazards associated with use of VDTs has been expressed by Dr. Milton Zaret, an opthalmologist from New York, and by the Newspaper Guild, whose union members use VDTs to a large degree. Allegations had been made that the radiation emitted from VDTs could eventually cause cataracts in the human eye.

The Subcommittee heard testimony from numerous government agencies which had investigated the health effects of VDTs, including the National Institute for Occupational Safety and Health (NIOSH), the Occupational Safety and Health Administration (OSHA), and the Air Force and Army Surgeon General. It was their consensus that VDTs were not a health hazard, in that the radiation emitted from the units were only harmful to a distance of 5 centimeters. The Subcommittee also found that no research had been conducted on radiation in the 15–125 kHz range, and recommended that NIOSH undertake such research.

RF heaters and sealers.—The Subcommittee also found that RF heaters and sealers were safe for use, as long as employees used the devices in the proper manner. If the devices were held incorrectly, then the workers could be subject to undue radiation exposures. The Subcommittee urged OSHA to continue its program of training workers to use and handle the devices in the proper manner.

3.8(e)—MICROWAVE COOKING AND PORK

In May 1981, it came to the Subcommittee's attention that, during a series of tests at the USDA food technology laboratories in Beltsville, Maryland, trichinae larvae had survived in pork chops cooked to USDA standards.

Trichinae larvae are the source of the parasitic disease trichinosis in humans. Therefore, the test results were of great concern. A preliminary investigation showed that because microwave ovens do not heat meat uniformly, the pork chops had cold spots, where the larvae survived.

The Subcommittee's efforts initiated two actions: The USDA, in conjunction with the National Pork Producers Council, set up a task force to examine methods of eradicating the existence of trichinosis in the United States, and to develop an economical means of testing slaughtered hogs for the presence of the larvae. Concurrently, the Subcommittee met with microwave industry representatives who began an effort to develop cooking methods which would heat pork evenly and eliminate the hazards.

3.8(f)—ENERGY DEMAND FORECASTING

On June 1 and 2, 1981, the Subcommittee held hearings on energy demand forecasting and its appropriate role in planning and policy. The hearings focused primarily on three areas: (1) methodologies used in predicting future energy demands; (2) current trends in long-range energy requirements; and (3) evaluation of the government's role in long-range energy forecasting.

As a result of the hearings, the Subcommittee issued a report with the following recommendations:

1. The Department of Energy should continue to actively use the resources of the Energy Information Administration (EIA) to perform the analyses necessary to forecast energy trends and opportunities. The Subcommittee also urged that the administration of the EIA be more closely integrated with the Office of Policy, Planning and Analyses to ensure the coordinated development of energy policy based on information and data.
2. The Federal Government should maintain an aggressive, broad-based energy research and development program which allocates research and development funds to better reflect the manner in which energy in now projected to be used; and
3. Current policy emphasis on energy supply should be balanced with adequate attention to policy which acknowledges the importance of energy demand.

Committee Publication Number 97-N.

3.8(g)—UNIVERSITY/INDUSTRY RELATIONSHIPS IN BIOMEDICAL RESEARCH

In November 1980, President Derek Bok of Harvard University proposed that the University set up a corporation to commercialize and market genetic engineering advances made on the Harvard campus. While the academic senate of the University rejected the proposal, it represented the beginning of a number of agreements between universities and major corporations in which, in exchange for the right to license marketable ideas, corporations were giving substantial amounts of money to universities.

During the past two years, many, if not most of the major biomedical research institutions in the country had made such arrangements. They ranged in size from a $3 million agreement between Harvard and the Monsanto Corporation to a $50 million agreement between the Massachusetts General Hospital and the German chemical firm of Hoechst, A. G. The Subcommittee was concerned about the impacts of such agreements, specifically whether they would adversely affect the exchange of information in academic research, and the training of graduate students and whether government regulatory agencies and Congress would have an objective source of scientific data. Two days of joint hearings were held on this subject on June 8 and 9, 1981, with the Subcommittee on Science, Research and Technology.

The Subcommittees also jointly conducted another set of hearings on July 16 and 17, 1982, to examine case studies of university-industry ties between the University of California at Davis and Allied Chemical and between the Monsanto Corporation and Washington University in St. Louis.

Chairman Fuqua and Subcommittee Chairman Gore wrote to the Association of American Universities and requested that a set of guidelines was in order to help universities enter agreements which would protect the interests of all parties.

Committee Publications Numbers 97-46 and 97-138.

3.8(h)—WEST VALLEY COOPERATIVE AGREEMENT. (H.R. 97-273)

On July 9, 1981, at the request of the Full Science and Technology Committee, the Subcommittee conducted a hearing to examine allegations that the West Valley Cooperative Agreement, a contract between the Department of Energy (DOE) and the State of New York to solidify high level waste at a nuclear site in New York, did not reflect the mandate under P.L. 96-368, the act which authorized the project.

The specific allegations were that New York was given specious "credit" for using the facility, such that it would not have to make any cash contributions to the project. Moreover, it was alleged that the language in the contract was vague in delineating the DOE's obligations for the decontamination of the site, such that the Department's financial exposure would be far greater than originally envisioned.

During the hearing, the Subcommittee heard from present and former DOE officials and representatives from the State of New York.

The Subcommittee recommended a report, based upon the hearing and investigation, to the full committee and concluded that many portions of the contract did not reflect the letter or intent of its enabling legislation. The contract was eventually renegotiated, to the satisfaction of all parties.

On October 6, 1981, the Committee on Science and Technology approved and adopted the report entitled: "West Valley Cooperative Agreement." October 15, 1981, the report was filed in the House (H. Rept. 97-273).

3.8(i)—NATIONAL TOXICOLOGY PROGRAM

On July 15, 1981, the Subcommittee held a hearing to review the three-year old National Toxicology Program (NTP). As originally conceived, the NTP was to strengthen the activities of the Department of Health and Human Services in the testing of chemicals of public health concern, as well as in the development and validation of new and better integrated test methods, in order to provide better scientific information to both research and regulatory agencies.

Witnesses from the affected agencies testified about the current effectiveness of the NTP and discussed possible improvements.

3.8(j)—INFANTE CASE

On July 16, 1981, the Subcommittee had scheduled a second day of hearings on the National Toxicology Program. One of the witnesses scheduled to appear was Mr. Thorne Auchter, Assistant Secretary for Occupational Safety and Health Administration, Department of Labor.

Immediately prior to the hearing, it came to the attention of the Subcommittee that Dr. Peter Infante, head of OSHA's Office of Carcinogenic Risk Assessment, was to be fired for allegedly misrepresenting OSHA policy by stating that OSHA considered formaldehyde, a ubiquitous chemical substance, to be a carcinogen.

The Subcommittee therefore took the opportunity to question Mr. Auchter, as well as other OSHA employees, on the circumstances surrounding the efforts to fire Dr. Infante. The incident called into question the right of government scientists to hold and express professional opinions, and raised question about the process for scientific decision-making at OSHA.

The Subcommittee discovered at the hearing that while OSHA had previously subscribed to the intra-agency Current Intelligence Bulletin, which labeled formaldehyde a probable carcinogen, after meetings with the Formaldehyde Institute, (the industry representatives) Mr. Auchter and Mark Cowan, Deputy Assistant Administrator for Regulation, had decided to withdraw from the Bulletin, without informing Dr. Infante.

The negative personnel action was subsequently withdrawn against Dr. Infante.

Committee Publication Number 97-21.

3.8(k)—SMALL, HIGH TECHNOLOGY FIRMS, INVENTORS AND INNOVATION

The Subcommittee has had a long standing interest in small, high technology firms, inventors, and innovation. On July 21 and 22, 1981, two days of hearings were held on the special problems of small high technology firms and inventors in securing financing and other assistance from private federal programs.

Government witnesses, as well as representatives from the academic community and industry, presented testimony. Additionally, the Subcommittee invited a panel of inventors and chief executive officers of high technology firms to question witnesses in an attempt to bring out specific issues encountered in day-to-day operations.

Committee Publication Number 97-43.

3.8(l)—SYNTHETIC FUELS CORPORATION

On July 27, 1981, the Subcommittee held a joint hearing with the Subcommittee on Energy Development and Applications on the technical and administrative aspects of the Synthetic Fuels Corporation and the types of proposals received at that time. For a more detailed description of this investigation, see the oversight section of the Subcommittee on Energy Development and Application.

3.8(m)—EFFECTS OF PRESCRIPTION DRUG USE DURING PREGNANCY

On July 30, 1981, the Subcommittee held a hearing on the use of prescription drugs during pregnancy. Testimony focused on the adequacy of research on the adverse effects of such drugs and the government's efforts to make the public aware of potential adverse effects.

Based on information developed during the Subcommittee's hearing, the Food and Drug Administration promulgated label warning requirements in September 1982 on over-the-counter drugs used by pregnant and nursing women.

Committee Publication Number 97-62.

3.8(n)—CARBON DIOXIDE AND CLIMATE: THE GREENHOUSE EFFECT

During the 97th Congress, the Subcommittee on Investigations and Oversight and the Subcommittee on Natural Resources, Agricultural Research and Environment held hearings on July 31, 1981 and March 25, 1982 into the climatic phenomenon resulting from the buildup of carbon dioxide in the atmosphere.

Since 1959, the U.S. Government has been monitoring the levels of CO_2 in the atmosphere from the weather station at Mauna Loa in the State of Hawaii. The primary source of increased CO_2 levels is believed to come from fossil fuel combustion—coal, oil and gasoline. It had been postulated by some that increased CO_2 levels are leading to a general warming of the Earth's atmosphere and portended significant climate changes and possible impacts on agricultural patterns around the globe.

During 1981 and 1982, the scientific literature revealed direct correlations between the increase in the Earth's mean temperature and a shrinking of the polar ice cap and an increase in the mean worldwide sea level. However, much uncertainty remains. Concurrently, the Administration had steadily cut the budget of the Department of Energy and other agencies to research the potential impacts of the greenhouse effect from a projected 1982 level of $16 million to $8 million.

The Subcommittees heard from a variety of scientists researching the field.

Committee Publications Numbers 97-45 and 97-115.

3.8(o)—COMPUTER MODELS

In the spring of 1982, the Subcommittee began a joint study of computer models used by the Federal Government. The survey was a continuation of the examination of issues raised in hearings on National Strategic Planning and is intended to complement some aspects of the work being carried out by the Council on Environmental Quality. The study was carried out jointly with the Subcommittee on Oversight and Investigations of the House Energy and Commerce Committee, and the General Accounting Office.

Questionnaires were sent to government agencies in an effort to identify and categorize major computer models used by each agency in the policymaking, policy evaluation, or program development process.

In September of 1982, the GAO submitted a report to the Subcommittees after processing and analyzing the questionnaires. The report is under consideration by the Subcommittees.

3.8(p)—TOTAL BODY IRRADIATION EXPERIMENTS AT OAK RIDGE ASSOCIATED UNIVERSITIES

In July 1981, the Subcommittee became aware of public allegations that certain physicians at Oak Ridge National Laboratory's Associated Universities had conducted unethical experiments using Total Body Irradiation during the early 1960s.

The Subcommittee began an investigation because of the seriousness of the allegations and the fact that the laboratory is a federal facility within the Committee's jurisdiction. A hearing was held on September 23, 1981.

The Subcommittee testimony revealed that while many of the conditions at the laboratory were not satisfactory, particularly when judged by the routine institutional safeguards and medical knowledge of today, the more scandalous allegations could not be substantiated. Given the standards of informed consent at the time, and the state of nuclear medicine, the experiments were satisfactory, but not perfect.

The Subcommittee's inquiry led to a later hearing on May 19, 1982, which examined the state of radiation epidemiology within the Department of Energy.

3.8(q)—EMERGENCY MANAGEMENT INFORMATION AND TECHNOLOGY

The nation's technological ability to cope with emergency situations was the subject of two days of hearings on September 29 and 30, 1981. The hearings focused on the present and potential roles of telecommunications and computers in emergency management.

Following the hearings, a one-day technical forum was held in November 1981 to discuss the role of information technology in emergency management.

Committee Publication Number 97-55.

3.8(r)—GENETIC SCREENING IN THE WORKPLACE

On October 22 and 23, 1981, the Subcommittee held hearings to examine the issues associated with occupational programs to screen prospective workers for certain jobs.

During the course of those proceedings, the suggestion was made that certain companies might be using cytogenetic and biochemical techniques to identify which workers might have heightened susceptibility to diseases causes by exposure to toxic chemicals.

Based upon those suggestions, the Subcommittee requested a comprehensive report from the Office of Technology Assessment, to establish the existence of such practices, and to assess the legal, ethical and social implications of use of such techniques.

On June 22, 1982, the Subcommittee held an additional hearing on this subject focusing on the OTA's finding that six companies were currently using such screening programs, and that 59 of the Fortune 500 companies had some plans to use them in the next five years. Witnesses were unanimous on two points: genetic testing was theoretically possible, but not now currently valid (that is, of sufficiently reliable predictive value); and that the advent of genetic testing could have significant impacts on occupational health law, including the Rehabilitation Act of 1973 and the Occupational Safety and Health Act.

A final hearing was conducted on October 6, 1982, in which the Subcommittee heard from a scientist who claimed to have the technology available, and from ethicists who gave guidance as to what applications of the tests would be valid or ethical.

Committee Publications Numbers 97-53 and 97-119.

3.8(s)—NATIONAL CANCER INSTITUTE'S THERAPY PROGRAM

On October 27, 1981, the Subcommittee held a hearing on the state of the investigational drug program within the National Cancer Institute (NCI) and the relationship between NCI and the drug regulatory process of the Food and Drug Administration (FDA). The hearing was held jointly with the Health and Environment Subcommittee of the Committee on Energy and Commerce.

The hearing focused on problems raised by a series of news articles which called into question (1) the informed consent procedures used by NCI-supported researchers in admitting patients into experimental drug programs; (2) the adequacy of animal testing prior to exposing humans to experimental drugs; (3) the nature of experimental protocols that permit the continued testing of drugs found to be severely toxic in humans; and (4) the potential for conflict of interest by researchers between their responsibility to their patients and the requirements of experimental protocols. The Subcommittees also explored the current ability of the FDA to adequately monitor NCI-sponsored clinical trials and the extent of interagency cooperation between the two agencies.

Witnesses included government officials, medical university representatives, and private physicians.

3.8(t)—HEALTH HAZARDS AT TNS, INC.

On December 8, 1981, the Subcommittee conducted a hearing to examine the circumstances surrounding a strike by members of the Oil Chemical and Atomic Workers (OCAW) union at the TNS ordnance plant in Jonesboro, Tennessee.

TNS, a subsidiary of Aerojet General Corporation, was a plant that built projectile cores for various army artillery shells. In the spring of 1981, workers at the plant had gone on strike over health conditions at the plant, especially excessive exposure to depleted uranium dust. The strike was unique in that the points of contention were not economic or wage-related, but instead involved occupational health issues.

The Subcommittee's investigation brought to light an evaluation by a private contractor of health conditions and the occupational hygiene program at the plant. The contractor, hired by TNS, had come to the conclusion that the conditions at the plant were substandard, and that the workers were largely correct in their assertions.

Using evidence introduced at the hearing, the National Labor Relations Board subsequently overturned an earlier decision by the agency's regional office in Nashville, finding in favor of the workers, and mandated that the striking workers be returned to their jobs.

Committee Publication Number 97-102.

3.8(u)—AMERICAN TECHNOLOGY TRANSFER AND SOVIET ENERGY PLANNING

In November 1981, the Congressional Office of Technology Assessment issued a report, at the initiation of the Subcommittee, which focused on the trade of energy related technology between the United States and the eastern bloc nations, particularly the Soviet Union.

The primary conclusion of the report was that, for a variety of reasons, the United States had far less leverage over Soviet energy policy than previously supposed, because the Soviets did not require U.S. technology to implement their national energy plans. This conclusion was of significant importance because one month after the report was released, the Administration, as a result of the Soviet invasion of Afghanistan, imposed a trade embargo on the Soviet Union to prevent construction of the West-Siberian pipeline. Thus, the report, and the subsequent Subcommittee hearings on December 10, 1981 and February 9, 1982, became an examination of the efficacy of trade embargoes.

During the hearings, the Subcommittee heard from the energy industry, financial institutions, research institutions, and the appropriate officials from the Departments of State, Commerce, and Defense.

The Administration lifted the sanctions in November 1982.

3.8(v)—PATENT TERM EXTENSION

On February 4, 1982, the Subcommittee conducted an oversight hearing on the Patent Term Extension Act of 1982.

The primary purpose of the hearing was to examine data presented by the Office of Technology Assessment that extending patent protection in correlation with time spent in the regulatory process would not necessarily increase pharmaceutical innovation or the effective patent life of pharmaceuticals.

Testimony was received from OTA, the Pharmaceutical Manufacturers Association, the Generic Drug Manufacturers Association, and the Food and Drug Administration.

3.8(w)—AVIATION SAFETY

During the Second Session of the Congress, two major commercial air accidents led the Subcommittee to examine both the Federal Aviation Administration's (FAA's) regulation of airport operations during inclement and snowy weather, and the system for weather data dissemination to commercial pilots. The hearings were conducted jointly with the Subcommittee on Transportation, Aviation and Materials.

The first hearing was conducted on March 9, 1982 soon after the crash of Air Florida Flight # 90. The Subcommittees heard from the National Transportation Safety Board, the FAA, the Air Line Pilot's Association, the Air Transport Association, airport operators from around the country, and other independent experts and consumer groups. The Subcommittees issued a report which recommended, among other things, that FAA issue more precise guidelines for deicing aircraft; FAA develop better procedures for checking ice build-up on aircraft awaiting take-off; and FAA allow ADAP funds to be expended for devices which measure the friction on runways during bad weather. The FAA adopted many of the Subcommittees' recommendations in an Air Advisory Circular in October of 1982.

The second hearing was held on August 11, 1982, in response to the crash of Pan Am flight #242 at the International Airport in New Orleans. The focus of this proceeding was the effectiveness of weather data reporting to commercial pilots in air terminal areas. The Subcommittees recommended that th FAA should make gathering and availability of weather information a higher priority, and that a high ranking administration official should be designated to have responsibility for weather evaluation. The Subcommittees also made a number of other recommendations concerning the use of various radar technologies for weather data, especially terminal area weather, and urged the FAA to make this a priority in their National Air Space plan. In November 1982, the FAA designated the Associate Administrator for Airport Operations as the lead weather official.

Committee Publications Numbers 97-85 and 97-126.

3.8(x)—SECRECY PROPOSALS AND ITS IMPACT ON SCIENCE AND TECHNOLOGY

On March 29, 1982, the Subcommittee held a joint hearing with the Subcommittee on Science, Research and Technology on recent Administration proposals for increased secrecy and control of scientific and technical information.

The objectives of the hearing were to (1) ascertain the impact on science and technology of present and proposed measures designed to limit the free exchange of information with foreign countries and their nationals; and (2) determine the societal, economic, and political consequences of proposed changes in rules, regulations, orders, and directives intended to increase controls over scientific and technical information exchange.

For a more detailed description of the hearing, see the oversight section of the Subcommittee on Science, Research and Technology.

3.8(y)—FEDERAL DRUG APPROVAL PROCESS

The Federal Drug Approval Process has long been an interest of the Committee on Science and Technology, dating back to the 95th Congress. This Subcommittee's involvement began last year when Subcommittee Chairman Gore, together with Mr. Scheuer, Chairman of the Subcommittee on Natural Resources, Agriculture Research and Environment, convened a Commission on the Federal Drug Approval Process. The Commission was composed of 26 distinguished academic, government, and private sector experts on drugs and the pharmaceutical industry.

Following its 10-month effort, the Commission made several recommendations in the following areas:

1. How the FDA's procedures for approving new drugs can be expedited without compromising public safety; and
2. Development of a cost-effective, post-marketing surveillance process that can guarantee the quick withdrawal from the marketplace of drugs which cause significant adverse effects.

Committee Publication is in process of preparation.

3.8(z)—SCIENTIFIC PERSONNEL IN FEDERAL AGENCIES

In April 1982, the Subcommittee sought the assistance of the general Accounting Office in undertaking a review of scientific personnel in federal agencies to establish whether current reductions in force were adversely affecting the science base of the federal regulatory and related research process.

GAO's work was hampered by the absence of base line data and the state of recordkeeping at the Office of Personnel Management. In addition, recent RIFs at OPM of computer specialists further delayed access to the computerized data. A report is expected from GAO in early 1983.

3.8(aa)—DIESEL TECHNOLOGY

On May 6, 1982, the Subcommittee held a hearing on the current technology and economics of diesel powered passenger cars, with a focus on how our present technological capability seeks to solve the problem of diesel emissions and the related health effects.

Testimony was received from representatives of industry, government, university, and public interest groups. Although the hearing began with a broad focus, discussions narrowed to the following topics: (1) the uncertainty over the size and scope of the diesel-powered fleet; (2) the connection between diesel emissions and harmful health effects; (3) the technology available to control or eliminate harmful emissions; and (4) the scientific basis used by EPA in setting diesel emissions standards.

3.8(bb)—COMPUTER TECHNOLOGY AND DEVELOPING COUNTRIES

In the spring of 1982, the French Government established the Centre Mondial por Informatique et Resources Humaine (World Center for Microprocessing and Human Resources) a $20 million effort aimed at transferring microprocessing technology to developing countries, and improving computer literacy in the Third World.

Representatives from the Board of Directors of the World Center appeared before the Subcommittee on Investigations and Oversight and the Subcommittee on Science, Research and Technology on May 19, 1982, to explain the goals and operations of the Center.

Using the World Center as a model, on July 15, the Subcommittees convened independent experts, representatives from the U.S. microprocessing industry, and officials from the Department of State, the Agency for International Development and the Federal Communications Commission. The focus of the second hearing was to identify existing U.S. policies for transferring microprocessing technology to lesser developed countries, to identify whether the issue deserved further study, and to come to some conclusions about the advisability of such a policy. While the U.S. Government is devoting monies to study the issue, there appears to be little in the way of a formal policy or interagency coordination on the issue, and the views of the domestic microprocessing manufacturers varied from complete disinterest in such technology transfers to aggressive marketing strategies for developing countries.

Committee publication Number 97-137.

3.8(cc)—FORMALDEHYDE

On May 20, 1982, the Subcommittee held a hearing to examine the scientific basis of the Environmental Protection Agency's decision not to consider formaldehyde a chemical for priority action under Section 4(f) of the Toxic Substances Control Act.

Early in 1982, the EPA had reverse its earlier decision to treat formaldehyde, a ubiquitous chemical substance, as a chemical for priority action under the Toxic Substances Control Act. The scientific basis of the decision was widely criticized in the scientific community. The Subcommittee undertook its review because the agency's decision document was the first full explanation by the Administration of how it intended to evaluate scientific data on the carcinogenicity of toxic substances.

The main purpose of the hearing was to examine the process used by EPA to gather and peer review scientific data, and reviewed EPA's evaluation of the data on the carcinogenic risk of formaldehyde.

The hearing also examined the scientific and policy rules used by EPA to assess the carcinogenic risk of chemicals, to see if EPA had departed from the traditional risk assessment principles used by the scientific and regulatory community and, if so, whether such changes had stood the test of scientific scrutiny and acceptance.

The Subcommittee heard from pre-eminent scientists on carcinogenic risk assessment, who expressed concern about EPA's departure from the well-established principles of qualitative risk assessment and the need to insure through public review of any departure from the widely accepted norm. The Subcommittee also heard testimony from the U.S. Consumer Product Safety Commission, which had banned formaldehyde in home insulation, and from industry, environmental and academic groups.

3.8(dd)—ROBOTICS TECHNOLOGY

On June 2 and 23, 1982, the Subcommittee held the first Congressional hearings on robotics technology. Of concern to the Subcommittee was the suggestion that the United States might be falling behind other industrialized nations in this emerging technology. Witnesses included representatives of Japanese robotics companies, American firms and universities, and U.S. Government agencies currently using robotics and/or engaged in research in this field.

Testimony was received concerning a national approach to development and implementation of robotics technology in the United States while assuring a minimum of worker displacement.

3.8(ee)—U.S. SOLAR AND CONSERVATION TECHNOLOGIES IN INTERNATIONAL MARKETS

Concerned with the threat to the competitiveness of U.S. conservation and solar technologies in world markets posed by cutbacks in DOE research and development programs at a time when the Europeans and Japanese are increasing or at least maintaining their own activities, the Subcommittee held joint hearings with the Subcommittee on Energy Development and Applications on July 3, 17 and 21, 1982.

The purpose of the hearings was to learn more about this potential problem and also to examine the adequacy of U.S. programs to promote the export of solar and conservation technologies.

For a more detailed description of the hearings, see the oversight section of the Subcommittee on Energy Development and Applications.

3.8(ff)—APPLICATION OF RECOMBINANT DNA TECHNIQUES AND GENETICS TO AGRICULTURAL AND LIVESTOCK PRODUCTION

As part of its continuing examination of applications of recombinant DNA technology, the Subcommittee examined the near term impacts of the use of recombinant DNA techniques and improvements in classical breeding in both the plant sciences and animal husbandry.

The hearings were conducted on June 8 and July 28, 1982. The Subcommittee heard from witnesses of leading academic research centers, small entrepreneurial firms, agribusiness, and the U.S. Department of Agriculture (USDA).

Committee publication Number 97-132.

3.8(gg)—EPA ONE YEAR REVIEW

On July 21 and 22, 1982, the Subcommittee held hearings to review implementation and enforcement of the environmental laws administered by the Environmental Protection Agency. The hearings were held jointly with three other subcommittees (see below) for the purpose of obtaining an overall perspective on EPA's performance during the preceding year, and to review the future direction of EPA's programs. The other subcommittees participating included: the Subcommittee on Natural Resources, Agricultural Research and Environment; the Subcommittee on Energy and Environment, Committee on Government Operations; and the Subcommittee on Health and the Environment, Committee on Energy and Commerce.

During the two days of testimony, the Subcommitees heard from Congressmen and Senators, and representatives from state and local governments, major environmental, scientific and industry groups. The Administrator of the Environmental Protection Agency also appeared.

It was evident from the hearing that great controversy and concern surrounds EPA's current stewardship of the Nation's environmental laws.

3.8(hh)—CHEMICAL AND ENVIRONMENTAL HAZARDS TO HUMAN REPRODUCTION

On July 27, 1982, the Subcommittee held a hearing on the status of detection and prevention of chemical and environmental hazards to human reproduction. The purpose of the hearing was to identify the relationship between toxic substances and reproductive hazards.

The hearing focused on additional means of identifying such hazards, coordinating government research in this field, and identifying research gaps in order to protect the American public from the dangers these substances pose.

Scientific experts and government witnesses discussed the needs and future direction of research in areas of reproductive toxicology, epidemiology, and teratology; and the need for inter-agency cooperation in focusing the research and data collection in this area.

3.8(ii)—STRUCTURAL FAILURES

The Subcommittee conducted an investigation of structural failures in public facilities such as the Hyatt-Regency in Kansas City in 1981. Hearings were held by the Subcommittee on August 3 and 4, 1982.

The purpose of the investigation was to determine if there are generic flaws in the design and/or construction of such facilities that would account for the apparently large number of failures in the last few years. The Subcommittee specifically excluded those failures which occurred during construction or involving mechanical and electric systems.

Testimony at the hearing was received from all aspects of the building industry: owners, architects, engineers, builders, lending institutions, and insurance companies. There was general support for the development of a federal entity with expertise to investigate failures and makes recommendations to avoid similar problems in the future. The National Transportation Safety Board was suggested as a model.

Following the hearings, the Subcommittee sent out 350 questionnaires to a cross-section of the construction industry.

3.8(jj)—COMPENSATION FOR VICTIMS OF POLLUTION-RELATED DISEASES

On August 12, 1982, the Subcommittee held a hearing to examine the obstacles that prevent many victims of toxic substance pollution from receiving compensation for their injuries. The Sucommittee focused principally on the issue of causation for injuries with long latency periods. Two specific case studies were examined by the Subcommittee: one involving PBB contamination and the other involving brown lung disease. Testimony was also received on the problems encountered by victims injured by exposure to such substances as asbestos and hazardous waste.

Consideration was given to the desirability of alternative compensation mechanisms to supplement or replace existing structures. Witnesses described the advantages and disadvantages of various administrative mechanisms, as well as changes in the existing tort law approach.

Additionally, the report of the Superfund Section 301(e) Study Group, mandated by section 301(e) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, was made public at the hearing and presented to the Subcommittee. That report proposed a quasi-judicial mechanism for compensating victims of toxic substance pollution. The conclusions of the National Science Foundation's Study detailing gaps in the scientific basis for pollution compensation was also presented at the hearing.

3.8(kk)—THE CONSEQUENCES OF NUCLEAR WAR ON THE GLOBAL ENVIRONMENT

On September 15, 1982, the Subcommittee held a hearing to examine the global environmental consequences of nuclear war. Testimony was received from prominent physicists, physicans, atmospheric scientists and ecologists whose work had led them to investigate the question of what Earth would be like after a nuclear war. The Subcommittee raised the question of whether those who may survive a nuclear war can survive in the post-war environment.

The Subcommittee heard testimony on the depletion of the Earth's ozone layer, the potential for epidemic-level disease, the likelihood of countless forest fires, and the potential that the particulate soot from such fires could be so dense as to block out the sunlight.

None of the witnesses heard believed that civil defense would provide reliable protection against any of the post-war effects that were described to the Subcommittee.

A joint resolution calling for an international research effort was introduced in December.

3.8(ll)—BYSSINOSIS

At a hearing held September 22, 1982, the Subcommittee examined the scientific debate over the causation, prevalence, and severity of byssinosis (brown lung disease) among workers in the cotton textile industry. The Subcommittee also reviewed the technology available for controlling cotton dust. Several recent studies have drawn differing conclusions on those questions, and the Subcommittee reviewed the findings of those studies. Eminent scientists and researchers on byssinosis offered their opinions on the conclusions of the studies.

The Subcommittee heard testimony concerning the Occupational Safety and Health Administration's (OSHA) reconsideration of its 1978 cotton dust standard which had been upheld by the United States Supreme Court in 1981. OSHA had initiated its current review of the cotton dust standard in February 1982, citing new medical studies that minimized the danger of byssinosis among textile workers.

Witnesses included scientists, industry and union representatives, and state government officials.

3.8(mm)—SETTING PRIORITIES FOR SCIENCE

On September 30, 1982 and December 8, 1982, the Subcommittee, together with the Subcommittee on Science, Research and Technology, began what was planned to become a series of hearings focusing on the question: What influences research and development priorities in the United States?

The Subcommittees' mission was not so much to pinpoint a process for R&D policy formulation, but rather to identify the various economic social and political elements that influence priority setting both in government and industry. During the September hearing, the Subcommittees heard from observers from academia and the government.

3.8(nn)—NEW OPPORTUNITIES IN TREATING KIDNEY DISEASE

On October 12, 1982, the Subcommittee held a field hearing on advances in the treatment of kidney diseases. Because of the leading role taken by Ohio State University in medical science, the hearing was held at the University. The purpose of the hearing was to examine alternative treatments for end stage renal disease, particularly alternatives to costly dialysis treatments and to determine if revisions are needed to the legislation passed by Congress in 1972 aimed at improving medical treatment for kidney disease.

Witnesses included representatives from the government and university physicians.

3.8(oo)—HUMAN GENETIC ENGINEERING

On November 16, 17, and 18, 1982, the Subcommittee conducted an in-depth examination of the human applications of genetic engineering inlcuding gene therapy and the myriad issues raised by that technology. The first day of the hearing was devoted to a consideration of the scientific state of the art in human genetic engineering. The second day focused on the religious and ethical concerns that arise with regard to the potential uses of the new technology. The third day was devoted to discussion of broad societal concerns, social policy issues, and possible mechanisms for oversight of the development of human genetic research and human engineering capabilities.

The Subcommittee heard testimony that within two years a basic map of the complete human genome will have been compiled and that actual genetic experimentation on humans to cure certain diseases will be possible within five to ten years. Broad support was heard for research to cure disease, but disagreement existed over the desirability of research for the eventual purpose of manipulating human physical and intellectual characteristics. Disagreement also existed over whether engineering to make genetic alterations that would be passed on to future generations would be appropriate or desirable.

The Subcommittee explored the need for some form of national oversight body or commission to examine the social, ethical, religious, and legal issues raised by the development of new scientific capabilities in this area. Agreement existed that such a body would be useful.

On the first day of the hearing, the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research released its report on the social and ethical issues involved in human genetic engineering. The report was submitted to the Subcommittee.

3.8(pp)—AUTO SAFETY

The Subcommittee conducted a joint oversight hearing with the Subcommittee on Transportation, Aviation and Materials on November 30, 1982, to examine the Department of Transportation's program for researching safety in small automobiles.

The Subcommittees had heard concerns expressed by various consumer groups that DOT research efforts—some of which were statutorily mandated—were being severely curtailed and that most research was being conducted jointly with the automobile manufacturers. Witnesses included representatives from DOT, safety consultants, and consumer advocacy groups. A more detailed description of the hearing is contained in the oversight section under Subcommittee on Transportation, Aviation and Materials.

CHAPTER IV—PUBLICATIONS OF THE COMMITTEE ON SCIENCE AND TECHNOLOGY—97TH CONGRESS

Committee Publications

HEARINGS

Date	Title	Publication No.
Feb. 17, 18, 19, 1981.	1982 FAA R&D Authorization	1.
Feb. 24, 1981	Fiscal Year 1982 DOE Authorization (Vol. I).	2.
Mar. 11, 12, 1981	1982 DOE Authorization	3.
Feb. 10, 11, 26; Mar. 19, 1981.	1982 NASA Authorization (Vol. III)	4.
Mar. 31; Apr. 3, 1981.	Aircraft Collision Avoidance Systems	5.
Feb. 24, 25; Mar. 2, 3, 10, 12, 16, 18, 19, 1981.	1982 DOE Authorization (Vol. II) (H.R. 3146).	6.
Jan. 28; Feb. 20, 23, 27; Mar. 2, 4, 5, 10, 11, 1981.	1982 NASA Authorization (Vol. IV) (H.R. 1257).	7.
Mar. 12, 17, 18, 19, 20, 21, 23, 24, 1981.	1982 NASA Authorization (Vol. V) (H.R. 1257).	8.
Feb. 26; Mar. 4, 5, 13, 17, 1981.	1982 DOE Authorization (Vol. III) (H.R. 3146).	9.
Apr. 13, 14, 1981	Sodium in Food and High Blood Pressure	10.
Mar. 31; Apr. 1, 1981.	Fraud in Biomedical Research	11.
June 16, 17, 18, 1981.	FAA Air Traffic Control Computer modernization.	12.
May 12, 13, 1981	Potential Health Effects of Video Display Terminals and Radiofrequency Heaters and Sealers.	13.
June 1, 2, 1981	Energy Demand Forecasting	14.
May 8, 1981	Proposed Legislation to Establish a Coastal Pine Barrens Reserve.	15.
June 24, 25, 1981	NASA Program Management and Procurement Procedures and Practices.	16.
July 8, 9, 1981	NASA Space Communications Program	17.
Feb. 25; Mar. 4, 11, 1981.	Earthquake and Fire Act Authorization (H.R. 3356).	18.
May 20, 1981	Flight of STS–1 with Astronauts John W. Young and Captain Robert L. Crippen.	19.
	1982 NASA Authorization Index	20.
July 16, 1981	Proposed Firing of Dr. Peter Infante by OSHA: A Case Study in Science Regulation.	21.
Mar. 11, 17, 18, 1981.	1982 Authorization for the Office of Research and Development, Environmental Protection Agency.	22.

BEST DOCUMENT AVAILABLE

CHAPTER IV—PUBLICATIONS OF THE COMMITTEE ON SCIENCE AND TECHNOLOGY—97TH CONGRESS—Continued

Date	Title	Publication No.
June 24, 1981	Implementation Plan for a National Nutrition Status Monitoring System (Joint hearing with the Committee on Agriculture).	23.
May 27, 1981	Environmental Effects of Sewage Sludge Disposal.	24.
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June 16, 17, 18, 1981.	Review of the National Bureau of Standards Organic Act.	38.
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Sep. 24, 1981	The Risk Analysis Research and Demonstration Act of 1981 (H.R. 3441).	58.
July 9, 1981	Impact of Air Pollutants on Agriculture Productivity (Joint hearing with the Committee on Agriculture).	59.
Oct. 27, 1981	National Cancer Institute's Cancer Therapy Program (Joint hearing with the Committee on Energy and Commerce).	60.
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Feb. 9, 10, 1982	1983 National Bureau of Standards Authorization (H.R. 5726).	73.
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Mar. 11, 1982	Reauthorization of the National Earthquake Hazards Reduction Act of 1977 (H.R. 6272) (Joint hearing with the Senate Committee on Commerce, Science and Transportation).	76.
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Feb. 11, 1982	Science and Engineering Education and Manpower (H.R. 5254).	93.
Feb. 25, 1982	Views on Science Policy of the American Nobel Laureates for 1981.	94.
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Mar. 29, 1982	Impact of National Security Consideration on Science and Technology.	110.
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June 2, 1982	Impacts of Budget Uncertainties on DOE's National Laboratories.	114.
Mar. 25, 1982	Carbon Dioxide and Climate: The Greenhouse Effect.	115.
June 23, 1982	Federal Commitment to Human Nutrition Research (Joint hearing with the Committee on Agriculture).	116.
Apr. 20, 22, 1982	Oversight—Public Law 96-479—National Materials and Minerals Policy, R.&D. Act of 1980 and consideration of H.R. 4281—Critical Materials Act of 1981.	117.
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May 28; July 28, 1982.	Renewable Energy in the Eighties: Needs for Further R&D (Including a Symposium on Renewable Energy in the Eighties: Needs for Further Research, Development and Demonstration).	130.
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March 1981	Costs of Synthetic Fuels in Relation to Oil Prices.	B.
April 1981	United States Civilian Space Policy	C.
January 1981	United States Civilian Space Programs 1958–1978.	D.
May 1981	Analysis of Hearings of H.R. 6910, the National Technology Foundation Act of 1980.	E.
May 1981	Analysis of Hearings on New Directions for Nuclear Energy Research, Development and Demonstration, Post-INFCE.	F.
June 1981	Survey of Science and Technology Issues—Present and Future.	G.
May 1981	The National Bureau of Standards—A Review of the Organization and Operations 1971–1980.	H.
June 1981	Innovation in the Basic Materials Industry.	I.
Apr. 27, 1981	To Provide for the Improvement of the Nation's Airport and Airway System (report to accompany H.R. 2643).	H. Rept. 97–24, Part I.
May 8, 1981	Authorizing Appropriations to the National Aeronautics and Space Administration for Fiscal Year 1982 (report to accompany H.R. 1257).	H. Rept. 97–32.
May 13, 1981	Authorizing Appropriations to the National Science Foundation (report to accompany H.R. 1520).	H. Rept. 97–34.
May 19, 1981	Earthquake Hazards Reduction Program and Fire Prevention and Control Program (report to accompany H.R. 3356).	H. Rept. 97–59, Part II.
May 19, 1981	Authorizing Appropriations for Atmospheric, Climatic, and Ocean Pollution Activities of the National Oceanic and Atmospheric Administration for Fiscal Year 1982 (report to accompany H.R. 2803).	H. Rept. 97–61.

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May 19, 1981	Authorizing Fiscal Year 1982 Appropriations to the Office of Research and Development Environmental Protection Agency (report to accompany H.R. 3115).	H. Rept. 97-93.
May 19, 1981	Department of Energy Civilian Programs Authorization Act of Fiscal Years 1982 and 1983 (report to accompany H.R. 3447).	H. Rept. 97-103, Part I.
July 1981	Information and Telecommunications: An Overview of Issues, Technologies, and Applications.	J.
June 1981	European Oversight Trip	K.
July 1981	Astronauts and Cosmonauts Biographical and Statistical Data (Revised—March 31, 1981).	L.
September 1981	Sodium in Food and High Blood Pressure	M.
September 1981	Energy Demand Forecasting and Its Appropriate Role in Planning and Policy.	N.
August 1981	Department of Energy Authorization for Fiscal Years 1982, 1983, and 1984.	O.
August 1981	Air Traffic Control Enroute Computer Modernization.	P.
May 1981	Science, Technology and Energy Development in Japan and China.	Q.
October 14, 1981	Air Traffic Control En Route Computer System (report to accompany H. Res. 202).	H. Rept. 97-271.
October 15, 1981	West Valley Cooperative Agreement	H. Rept. 97-273.
December 10, 1981	Uniform Federal Research and Development Utilization Act of 1981 (report to accompany H.R. 4564).	H. Rept. 97-379, Part I.
December 15, 1981	High Level Radioactive Waste Management and Policy Act (report to accompany H.R. 5016).	H. Rept. 97-411, Part I.
November 1981	Risk: Assessment, Acceptability and Management.	R.
February 1982	NASA Space Communications Program	S.
December 1981	Civil Land Remote Sensing Systems	T.
March 1982	Summary of Hearings on the Future of the Nation's Energy Utilities: Implications for Federal RD&D.	U.
Mar. 16, 1982	Small Business Innovation Development Act (report to accompany H.R. 4326).	H. Rept. 97-349, Part IV.
March 1982	National Energy Conservation Policy Under the Reagan Administration: Analysis of Hearings on the DOE Authorization for Fiscal Year 1982.	V.
June 1982	Science, Technology, and American Diplomacy 1982 (Joint print with the Committee on Foreign Affairs).	W.
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Apr. 26, 1982	Authorizing appropriations to the National Science Foundation (report to accompany H.R. 5842).	H. Rept. 97-485.
May 5, 1982	Authorizing appropriations to the National Bureau of Standards for Fiscal Year 1983 (report to accompany H.R. 5726).	H. Rept. 97-501.
May 5, 1982	Authorizing appropriations to the National Aeronautics and Space Administration for Fiscal Year 1983 (report to accompany H.R. 5890).	H. Rept. 97-502.
May 17, 1982	Authorizing appropriations to the Federal Aviation Administration for research, engineering and development for Fiscal Year 1983 (report to accompany H.R. 6193).	H. Rept. 97-523.
May 17, 1982	To amend the Earthquake Hazards Reduction Act of 1977 to extend authorizations of appropriations (report to accompany H.R. 6272).	H. Rept. 97-535, Part 2.
May 18, 1982	To authorize appropriations for atmospheric, climatic, and ocean pollution activities of the National Oceanic and Atmospheric Administration for Fiscal Years 1983 and 1984 (report to accompany H.R. 6324).	H. Rept. 97-557, Part 2.
May 18, 1982	Authorizing appropriations to the Office of Research and Development, Environmental Protection Agency, for Fiscal Years 1983 and 1984 (report to accompany H.R. 6323).	H. Rept. 97-574.
June 24, 1982	To establish a program under the coordination of the Office of Science and Technology Policy for improving the use of risk analysis by those Federal agencies concerned with regulatory decisions related to the protection of human life, health, and the environment (report to accompany H.R. 6159).	H. Rept. 97-625.
July 1982	Symposium on Minorities and Women in Science and Technology.	AA.
August 1982	Aviation Safety Research	BB.
Aug. 13. 1982	Expressing the sense of the Congress that, to encourage educational programs in science and technology, a National Science Center for Communications and Electronics should be established (report to accompany H. Con. Res. 204.	H. Rept. 97-745.
Aug. 17, 1982	Commemoration of the International Geophysical Year (report to accompany H. Res. 514).	H. Rept. 97-758, Part 1.

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Aug. 19, 1982	Humane Care and Development of Substitutes for Animals in Research Act (report to accompany H.R. 6928).	H. Rept. 97-777, Part 1.
Sept. 8, 1982	Research Programs Conducted by the Nuclear Regulatory Commission.	H. Rept. 97-795.
October 1982	Commission on the Federal Drug Approval Process.	CC.
Sept. 29, 1982	Making Appropriations for the National Aeronautics and Space Administration (conference report to accompany H.R. 5890).	H. Rept. 97-987.
Oct. 5, 1982	National Engineering and Science Manpower Act of 1982 (report to accompany H.R. 7130).	H. Rept. 97-933, Part 1.
June 1982	The Information Science and Technology Act of 1981.	DD.
	Energy-Efficient Technologies: Advancing U.S. Competitiveness and Productivity (Proceedings of a Seminar).	EE.
October 1982	The Human Factor in Innovation and Productivity (Including and Analysis of Hearings on the Human Factor in Innovation and Productivity).	FF.
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